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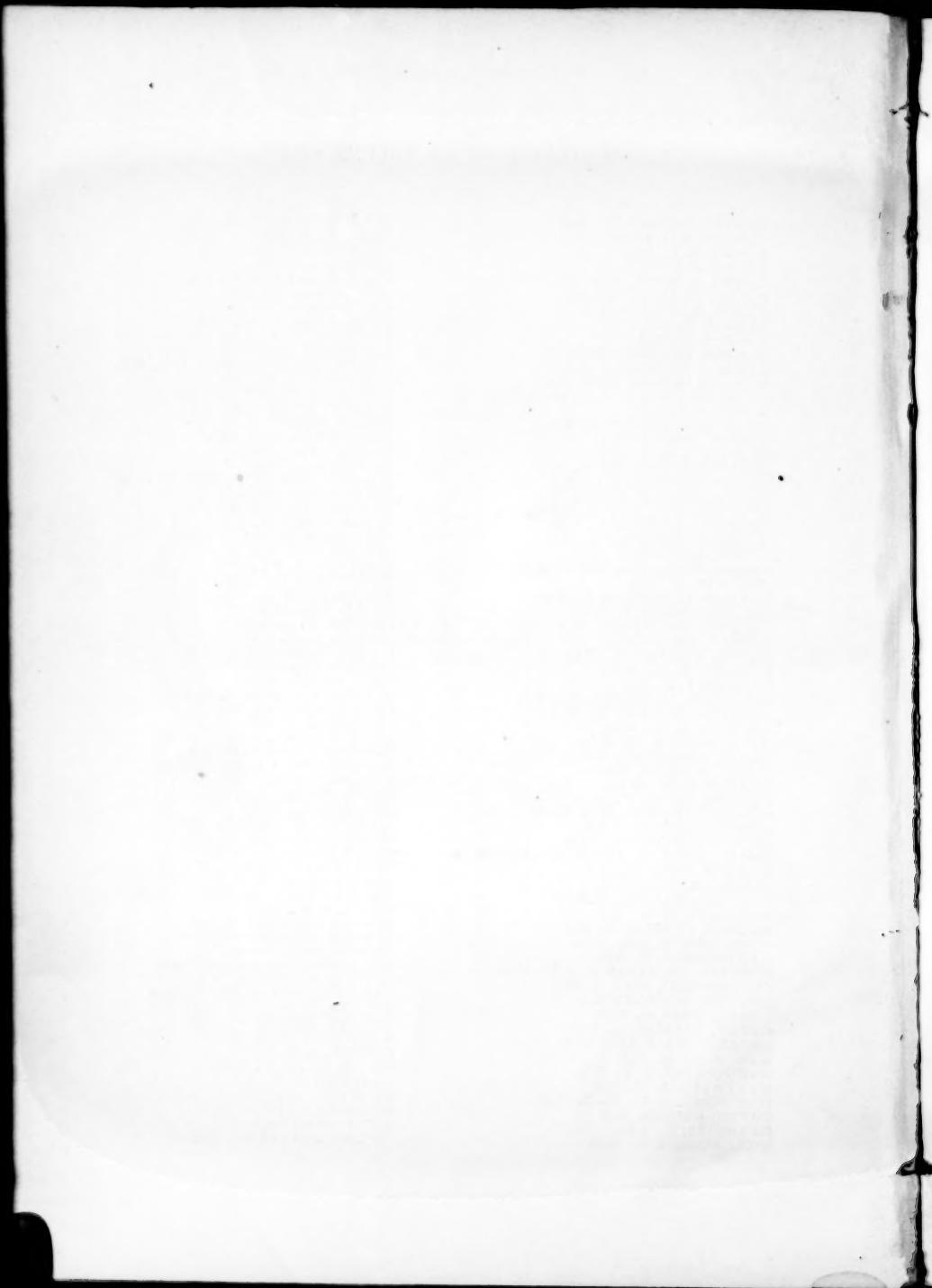
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Original Articles.**ON THE RELATION OF EPILEPSY TO INJURY OF THE HEAD.¹**

BY JAMES J. PUTNAM, M.D.

AT the recent Congress in Washington the important subject of traumatic epilepsy from fracture of the skull was brought up by Dr. Agnew,² of Philadelphia, in the course of his paper on "The Surgery of the Brain." After speaking of the unsatisfactory results of operative treatment after the neurosis has once established itself, he expressed the opinion that the improper surgical treatment of the case at the time of the occurrence of the fracture is responsible for much of the subsequent mischief, and, went on to say: "Whenever, therefore, in my judgment, the profession can accept the doctrine that all depressed fractures of the cranium, however slight may be the depression, and entirely irrespective of pressure symptoms, are proper subjects for trephining, then will traumatic epilepsy largely disappear from the list of surgical diseases; indeed, I am sure that he who shall propose to tabulate, at the end of the next twenty-five years, the cases of epilepsy, will find, as compared with the present time, a meagre supply for his purpose. It is not improbable, indeed, in view of the greatly diminished risk from trephining, that the operation will be extended even to cases of simple fracture or fissure of the skull."

It will be fortunate, indeed, if this optimistic view turns out to be well founded. Since, however, it is of the highest importance for us to know, in detail, on just what principles we ought to proceed, when called to a case of fracture, and how much immunity from epilepsy or insanity we can promise our patient in return for his submitting, though free from symptoms, to trephining and perhaps to opening the dura, it seems worth while to re-examine the evidence as to the frequency and the causes of the unwelcome result and the possibility of avoiding them.

The adoption of this view assumes that the cause of the epilepsy is the irritation at the seat of principal injury, and especially the irritation due to displaced fragments of bone,³ and the failure of late operations for removal of the bone to effect a cure is considered as due to the epileptic habit having become established.

It is difficult to test the correctness of this explanation, but it is not an altogether satisfactory one. It is common enough to see cases where trephining, undertaken after a certain number of fits have occurred, do check their recurrence for several years, long enough, one would think, to break up the epileptic habit, if there were nothing else besides the irritation starting from the depressed bone to maintain it. But not only do the fits almost always recur in the end after trephining, but they usually recur when, besides the bone, portions of the cortex, which the symptoms indicated to be the centres of origin of the attacks, have been removed likewise, as Dr. Agnew himself points out.

Moreover, the recent excisions of motor areas which were apparently responsible for outbreaks of ordinary

¹ Read before the Boston Society for Medical Improvement, November 2, 1891.

² Published in the University Medical Magazine, Philadelphia, October, 1891.

³ Dr. Agnew (loc. cit.) speaks particularly of the irritation of the sensory nerves of the dura by depressed or broken bone, "an irritation propagated to the meninges, and, later on, to the cortex and brain-ganglia."

epilepsy of the localized type, also seem to be far less effective than was hoped. The attacks are usually arrested, sometimes for one or two years, or even longer, and in exceptional cases they may never return; but this is hardly more than seems occasionally, (though less often) to happen after other operations where neither cortex nor diseased bone are removed, so that, important as both trephining and cortical excision may be as a means of treatment, where we wish to gain a temporary respite, or to take every chance of cure, they must for the present count rather as excellent inhibitory measures, than as proving the nature or origin of the disease.

If Dr. Agnew's opinion, which represents that of many surgeons, cannot be sustained by evidence, and the patient's prospects are not improved by treatment of the local injury to anything like the degree indicated, it is eminently important that we should not let ourselves be turned aside by it from the search for other influences that may turn out to be equally important in the causation of epilepsy. If, on the other hand, that opinion can be sustained, and if trephining carries with it so little risk of inducing either immediate or subsequent mischief, then, I think, it should be seriously considered whether we ought not to trephine, also, in cases of healed fracture that come to us not too long after injury, but before epileptic symptoms have appeared.

There is, of course, no question as to the propriety of trephining, in many cases of fracture even without symptoms, on general surgical grounds. The indications for doing this have been clearly laid down by various writers, and among others by Wagner, in an excellent address published in 1886 as Nos. 271, 272, of Volkmann's *Klinische Vorträge*. The treatment there advised is based almost wholly on the importance of preventing or curing local infection, though with the secondary aim of getting rid of irritating fragments of bone. Simple depression is considered as dangerous, not as a cause of intracranial pressure, but only in that it is liable to interfere with the union of the broken bones and lead to suppuration by disturbing the circulation in the diploe, and he recommends that when the fracture is not compound a moderate depression should be left untreated. Linear fracture without symptoms, even when compound, is considered as calling for treatment only when hairs or other foreign substances are caught in the crack, and then he uses the chisel so far as is necessary for removing them.

Wagner recognizes at the same time that trephining is a relatively trifling operation.⁴ He urges it for localized meningitis, or to secure a more aseptic condition of the broken bone and underlying parts, as in perforating wounds, and even, in case of doubt, for exploring the condition of the tissues beneath the bone, especially when suppuration of the dura is suspected.

Although Wagner considers it important to remove broken fragments of the inner table when feasible, he calls attention to the fact that they generally heal smoothly if left alone, and this opinion gains some support from the fact that the osseous plates which so often form in the dura usually do no harm, though they are considered by some pathologists⁵ as of inflammatory origin.

⁴ Dr. Manley, of Brooklyn, demurs to the view that trephining after injury is so safe, and quotes cases to show the danger of hernia cerebri.

⁵ See Ziegler's Handbook of Pathological Anatomy.

Do we know with any approach to accuracy how much immunity from epilepsy is secured by early trephining,⁹ or in what class of cases immunity is secured at all?

The absolute evidence of the character necessary for answering these questions is small in amount. No systematic attempt has been made by any writer to compare, as regards the subsequent occurrence of epilepsy, any large series of cases in which the skin, bone and underlying parts were treated early by the best modern methods of surgery, with a similar number which were not so treated; and, on the other hand, there are plenty of individual cases on record where, under such treatment as was adopted, the parts healed satisfactorily and showed later no sign of disease, and yet epilepsy supervened.

Among the cases of fracture, especially of gun-shot fracture, occurring in our late war,¹⁰ this happened repeatedly, though of course the methods then followed were not as thorough as those in use to-day.

An analysis of these cases made for me by Mr. F. Coggeshall, shows that five per cent. of the patients trephined at the time of injury subsequently had epilepsy, and that thirty-two per cent. of all the patients who became epileptic later had been trephined at the time of injury.

It is not enough to point out that cases of epilepsy following properly treated fracture do not present themselves in our dispensaries and consulting-rooms, for the whole number of cases that would be admitted by the best surgeons as having been properly treated is extremely small, and the proportion of cases in which epilepsy occurs after fracture, treated or not treated, is also a small one, though the danger is apt to loom up prominently when we are first called to such a case.

Does the simple persistence of a depression in the bone, for example, without detached fragments or signs of inflammatory processes, at the end of a number of years, prove that the case was not properly treated at the outset? From the point of view of surgical treatment we should perhaps have to answer yes, but, in fact, it is doubtful whether the chances of epilepsy are really much increased by such a condition, except where the displacement prevents the bone from healing properly, as sometimes happens.¹¹

Not only is it common enough to see depressions in the skull without epilepsy, but it is difficult to see why epilepsy should result unless the depression is the cause or accompaniment of osteitis or meningitis, or changes in the nutrition of the brain, and that these results usually occur is not shown by the records of subsequent operations or post-mortems, or by the inspection of the specimens in our museums. Microscopic investigations might tell a different story, but at any rate there is no reason to think that the simple increase in intracranial pressure from a moderate depression causes symptoms of cerebral compression, except sometimes at the outset. If depression in itself is a cause of epilepsy it must be because, as Dr. Agnew suggests, it sets up an irritation of the dural nerves, and, in some way not known to us, possibly by way of neuritis, an impairment of the cerebral nutrition.

It must, I think, be admitted, with regret, that the view which looks for so much security in the treatment of the fractured and depressed bone is not based

⁹ This term is to be taken, of course, as covering all the measures used in exploring the injury of the bone and underlying parts.

¹⁰ Surgical History of the War of Rebellion.

¹¹ Compare Wagner (*loc. cit.*).

upon a sufficient recognition of the obscurity which still surrounds the origin of epilepsy, and of the variety of the possible causes liable to be set in action by severe injuries to the head, some of which are amenable to early treatment, while others are not.

The study of epilepsy as it occurred among the German troops in the late Franco-German war is full of interest in this connection.¹²

It is, in the first place, worthy of note, that by far the greater number of cases occurring in the German army and due to army life were of other than traumatic origin,¹³ because it reinforces the view that epilepsy is usually a general cerebral neurosis.

That it may arise from purely local cerebral disease seems unquestionable, especially when we consider that it may be excited in animals by localized faradization of the cortex. But in many of the traumatic cases, and especially where the outbreaks do not occur until years after the injury, influences are present affecting the nutrition of large areas of the brain, and these certainly constitute possible causes of the disease.

Of the sixty-three traumatic cases (omitting a large number of epileptiform vertigos, etc., and a few unclassified cases) forty-six followed injuries of the head, seventeen, injuries of the body and limbs.

Again, epilepsy occurred out of

8,985	injuries of the head	28 times = 0.31 %
11,091	" neck and trunk	5 " = 0.04 %
35,700	" arms	5 " = 0.015 %
35,670	" legs	7 " = 0.02 %

The greater number of the epilepsies from head injury appeared to be from sensitive scars of the scalp, combined with the effects — difficult to estimate — of cerebral contusion and concussion; but that these latter were of themselves sufficient causes (and causes which are present in almost all cases of fracture) was shown by the history of seven cases where the head sustained no local injury, but only suffered from general concussion.

The sensitiveness of the scars of the scalp seems to have been due to the bruising of the skin against the hard underlying surface by bullets or fragments of shell; and the scars following sabre-cuts were generally non-sensitive. The avoidance and removal of such scars would, of course, be eminently in place, and the same may be said of irritations of the dura.

It may be easily conceived that, besides fractures with displacement, cases of *healed* fracture would occasionally present themselves where — as a protection against epilepsy — trephining for the removal of suspected irritation of the dura would be justifiable.

Local injuries of the brain are recognized in these reports, as well as by all surgeons, as a possible cause of epilepsy, and these local lesions are liable to be beyond the reach of such surgical treatment as will remove the danger of epilepsy.

Dr. Keen¹⁴ has, to be sure, suggested the importance of the systematic removal of disorganized brain tissue, and this may mark a decided advance over Wagner's method,¹⁵ which consisted in removing only such parts of the brain as protruded beyond the dura, but it is too early to tell how thoroughly this plan can be carried out or with what results.

It is quite possible that we attribute too much im-

⁹ Vol. vii, *Erkrankungen des Nervensystems*, Berlin, 1886.

¹⁰ Fatigue, acute disease, excitement, over-exertion, fright, cold, general conditions.

¹¹ American Journal Medical Sciences, September, 1891.

¹² Compare Wagner, Volkmann's *Klinische Vorträge*, Nos. 271, 272.

portance to the irritation at the seat of fracture as the cause of the subsequent epilepsy, instead of considering it as only one, though usually the chief of several contributive causes. At any rate the following facts should be borne in mind before we commit ourselves to a definite conclusion.

(1) Traumatic epilepsy is by no means always of the localized, so-called "Jacksonian" type. In many cases the loss of consciousness is as early and as sudden, and the first convulsive symptoms as widespread, as in ordinary epilepsy, and although the irritation of the dura at the seat of fracture might account for such attacks, we have no right to consider that it is the only or even the principal cause, so long as other possible causes are present, and this, in severe head injuries, is usually the case. As a rule, whether the skull be fractured or not, the brain is injured in a number of different parts, and the lesions of the brain near the seat of injury to the bone are liable to be much more extensive than the osseous fracture, and more or less independent of it.¹³

Either one of these various lesions, as well as the general injury which the brain sustains from concussion, are adequate causes of epilepsy, and it is not improbable that they may work together as contributive causes. Of course, even if this be true, we are not relieved from the duty of treating the original wound so as to secure a healthy and rapid repair of all the injured tissues, including the brain, so far as this is possible, but even after doing this we should be guarded in our prognosis. I shall refer again below to the important subject of the contributive action of several partial causes in inducing epilepsy even of the Jacksonian type.

(2) In many cases there is a considerable interval, often years in length, after the injury and before the epilepsy appears. Are we to assume that, during this period of latency, the hidden danger is silently drawing nearer, or is it more probable that while the irritation remains the same some new cause comes in to precipitate the outbreak? If the former is probably true, have we a right to assume that the series of nerve and brain changes resulting in the epilepsy are alone those which have the injury at the seat of fracture as a focus? Is it improbable that the inflammations and irritations starting from other foci of injury to the bone, membranes or brain, play their part in inducing the result? The answer to this question must depend upon the evidence with regard to the contributive influence of partial causes.

The immediate causes of epilepsy in these traumatic cases are so obscure and baffling that we ought to keep ourselves in a very catholic spirit during our search for them.

The only way to answer the question as to what are the significant alterations that occur before the attacks appear would be to tabulate all the morbid changes which do take place during this interval and that could possibly be causes of epilepsy, and then try to discriminate between their effects.

The physiological characteristic of the epileptic brain is generally believed to be that a greater or less portion of its ganglionic matter has acquired the habit of discharge under less than the normal stimulus; and

from what we know of the physiology of the nervous system it is fair to assume as probable that this liability to premature discharge might be brought about in three general ways: (a) by modifications of the nutrition of some particular centre or area of the brain; (b) by impairment of the inhibitory relations between different parts of the brain;¹⁴ (c) by an unnatural increase in the number or force of the stimuli tending to provoke the discharge of a given part of the brain. It is in this latter way that we may suppose "reflex" epilepsy to be caused, and we might class as "reflex" — at least for purposes of investigation — those epileptic attacks which are produced by the action of one part of the brain upon another.

In seeking the cause of epilepsy from injuries of the head, such as fracture with depression, we are too prone to look only at the lesion indicated under *a*, and fail to recognize sufficiently the more distant and obscure lesions falling under *b* and *c*.

I think there is reason to suspect that even when the "signal symptom" of an epileptic attack, in a case of head injury or cerebral disease is sharply localized, the responsibility for the outbreak should not always be laid exclusively at the door of the centre especially correlated with this "signal symptom," but that it often implies an abnormal condition of other parts of the brain, or of the brain at large. Certainly a number of cases have been reported¹⁵ of epilepsy of the Jacksonian type where careful examination has failed to reveal any lesion of the corresponding centres in the cortex.

We do not yet know the anatomical correlates of the epileptic state with enough exactness to make it worth while to describe them, but we may hope to arrive at them eventually by a conscientious study, macroscopic and microscopic, of the changes occurring in epileptic brains, especially during the pre-epileptic stage.

We do know already that during the latent stage of traumatic epilepsy the morbid changes developed by the injury (which may have several centres) are liable to spread laterally (Ziegler) as well as to become locally more intense; and we know further that localized epilepsy is liable to occur in brains which have been for a long time the seat of extensive and progressive morbid processes, as in the case of the post-hemiplegic epilepsy of children, and the epilepsy in paretic dementia. Again, we know that influences acting on sensory centres in the brain, such as fright, or fatigue, or toxic substances in the blood, may precipitate an attack, or even cause the disease. Löwenfeld¹⁶ calls especial attention to the fact that epilepsy having its starting point in the irritation produced by a tumor or other gross lesion, may remain latent until some other general cause comes in to increase the effectiveness of the local cause.

It is reasonable provisionally to suspect, therefore, that in the traumatic cases, multiple and spreading lesions which often exist, may contribute to increase the injurious effect of a predominant local injury.

It is undoubtedly true that purely local irritations of the cortex may excite epileptic attacks, just as these may be excited by localized electrical stimulation; but there is a body of facts, to which I think too little at-

¹³ Widespread hemorrhages and softening often ending in adhesive meningitis, are extremely common. See Bryant, Hunterian Lecture, Lancet, June, 1888; also Durat, *Traumatismes Cérébraux*; and an interesting case reported by Walter Channing in this Journal, July 8, 1888.

¹⁴ See Hare's recent monograph on epilepsy.

¹⁵ Charcot and Pitres: *Rev. Mensuelle*, 1878, xi. See also Löwenfeld: *Arch. für Psych., etc.*, vol. xxii; and Kramer: *Jahrbuch für Psych.*, 1891, 1.

¹⁶ Loc. cit.

tention has been paid, which indicate that both in so-called idiopathic epilepsy and in some forms of traumatic epilepsy, the special and "localized" auras and convulsions are sometimes only the expression of a morbid condition involving a large cerebral area, or a whole hemisphere, or the whole brain, just as the feeling of anger may cause habitually, in one person a clenching of the fists, in another a frown or a paleness of the face, in another a sense of intellectual inhibition.

The character of the first, and, through the establishment of habit, of the subsequent outbreaks, would then be referable to a greater physiological excitability of one or another part of the brain, either native as in the case of the hand and face centres, which, as Hughlings-Jackson long ago pointed out, are so prone to be the first to discharge in ordinary epilepsy, or due to local disease or irritation of the brain or of the peripheral nerves as in traumatic and reflex epilepsy.

This principle has been abundantly established by both physiological experiment and clinical observations,¹⁷ but its practical significance as necessitating a modification in the application of the doctrine of the localization of functions in the brain,¹⁸ has not been sufficiently dwelt upon. The character of the most important pieces of evidence may be briefly indicated as follows:

(1) The experiments of Ferrier,¹⁹ of Bubnoff,²⁰ and Heidenhain, and other physiologists have shown that the movements of certain parts, such as the face, may often be excited by minimal stimulations of the cortex which are ineffective as regards other movements.

(2) It is asserted by Bubnoff that if an animal, in the course of an experiment, makes an accidental movement of a limb, the same movement is especially likely to be called out by the subsequent electrical stimulations of the cortex; or that if one limb is stroked or moved, movement is more likely to occur there than in other parts under a stimulation of given strength applied successively to all parts of the motor area.

(3) It is a remarkable fact, noted by Dr. Hughlings-Jackson, that the primary or "signal" (sensory or motor) symptoms of an epileptic attack in man occurs far oftener in the hand or face than in other parts, evidently because of the great physiological mobility and sensitiveness of these parts, so much so that I think such symptoms are of less value as indicating a localized irritation of the brain than the similar symptoms when affecting other less mobile parts, such as the leg or shoulder; that is, the hand or face may be thrown into convolution alone, or primarily alone, by an inflammatory process covering a large area. This principle applies both to traumatic and inflammatory, and to so-called idiopathic cases. I say so-called, because I believe that, pathologically considered, the traumatic and non-traumatic cases are often closely analogous.

Thus, to take one case out of many that could be cited, Dr. J. C. Warren operated recently, at my request, on a patient who, in consequence of a meningeal hemorrhage or meningitis which had occurred during a typhoid fever eight or ten years before, had had a transient hemiplegia followed by epilepsy.

¹⁷ Hughlings-Jackson and others.

¹⁸ I have called attention to some of its relations in a paper published in the Transactions of the New York State Medical Association in 1886.

¹⁹ Localization of Functions in the Brain. = Pfüger's Arch. 1889.

He had distinct auras, both sensory and motor, in the left hand, frequently without loss of consciousness, but at the operation the lesion was found to cover a good part, if not the whole, of the arm and face area. We snipped out a bit of the cortex, simply guessing at the hand centre, since no electrical response could be obtained, and for the next week the hand was paralyzed, obviously because its cortical arrangements were especially sensitive to damage, as they had previously been to irritation.

CONCLUSIONS.

(1) The causes of epilepsy are numerous; and we cannot hope in most cases to remove them all by early trephining and care of the wound, though these measures, and especially the removal of fragments, are probably very important.

(2) The local and the general injury of the brain are probably of prime importance, as causes of epilepsy, and are to some extent independent of fracture. The former may perhaps sometimes be treated as suggested by Keen, but the latter can only be reached by general treatment.

(3) The treatment of the general conditions of the brain, by cold and by prolonged, absolute mental rest is probably of great importance, and might perhaps be reinforced by other measures directed to the same end.

(4) The occurrence of localized convulsions or auras does not necessarily indicate limited local disease, to be removed by operation; since, on the theory that the disease is a general one, it would have to find some local expression. It is especially true that convulsions or sensory auras beginning in the hand or face are untrustworthy indications of the extent of the cerebral lesion, because the cortex corresponding to these parts has a high degree of irritability.

(5) Considering the long period that usually elapses after an injury to the head, before epilepsy declares itself, a period during which the patient may be perfectly well, it is reasonable to seek for some better term than "local irritation" to express the connection between the two events. We may fairly suspect that in most such cases a degenerative process goes on, which increases in extension and perhaps in intensity. Sometimes a neuritis, starting from the seat of injury seems the important link ["History of Franco-German War;" Nothnagel].

We know that such a progressive degenerative process as this is capable of giving rise to epilepsy of the localized type, independently of any gross local irritation, as in the case of epilepsy complicating general paresis, of ordinary epilepsy of certain types, and perhaps of epilepsy in cases of head injury without fracture, and of diffuse cerebral sclerosis. We know, further, that the removal of gross irritations in case of an already existing epilepsy of traumatic origin usually gives only a temporary relief. It is, therefore, reasonable to suspect that the state of impaired storage power on the part of the ganglion cells, which we call the epileptic state, is liable to be more widespread than the signal symptoms of the fit would suggest; that we have as often an instance of impaired inhibition or mutual support between different cerebral centres as of locally impaired storage power; that the fit is local in its first expression because the centre corresponding to the initial symptom was an especially irritable centre (for physiological or pathological reasons), and that the impulse to its discharge may originate else-

where, or be inoperative unless reinforced by other influences.

How near the epileptic condition may be to apparent health, that is, the latency of the epileptic state, is shown by the fact that epilepsy interchanges with other neuroses, and that the attacks may be brought on by slight causes. This, of course, is a reason for trying first to inhibit attacks for a time so as to check the habit, and, next, to keep away all possible exciting causes. This may constitute a sufficient reason for trephining even when we cannot believe that we can remove the cause of the disease.

(6) May not operation by trephining, for the sake of exploring the parts, be called for in case of patients presenting themselves for the first time after the fracture has healed, but before the outbreak of epilepsy — say within six months or a year? In some respects the tissues are perhaps in better condition for exploration, with the prospect of finding a delimited and removable lesion, a short time after the injury, though it is also true that degenerative processes may already have been initiated. This is a matter for further study.

TWO CASES OF TREPHINING FOR TRAUMATIC EPILEPSY.¹

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At the first Congress of American Physicians and Surgeons the subject of brain surgery excited much interest; at the second Congress the interest was as great, but three years' additional experience rendered the views of those who took part in the discussion distinctly less hopeful. This was especially the case with the question of trephining for epilepsy. The hope of cure from trephining in traumatic epilepsy, or from excision of the cortex in Jacksonian epilepsy, is now regarded as slight, although relief is not infrequently obtained. Some men, indeed, in the discussions took, without warrant, a thoroughly pessimistic position; the majority were not disposed to hope greatly from surgical interference. It therefore seems not unjustifiable to report the following cases, partly because failures should be reported as well as successes, and partly because they illustrate one or two points of interest.

Kate F., sixteen, single, a nursery-maid, presented herself at the out-patient department of the Boston City Hospital, February 17, 1890. She was born in Ireland. Her mother had been insane for eight years, her older sister was rather nervous; otherwise no hereditary taint could be discovered. The girl herself had always been in good health. The catamenia had been established two years before, and since then had been regular and without disturbance. Five years before coming to the hospital she was struck in the forehead with a stone, and was rendered unconscious by the blow. She was carried to a hospital in Dublin and lay unconscious for three days. She then recovered her senses, but she remained in the hospital for three months. After the injury she had strabismus for a time, but that passed away. Ever since the injury she has been subject to headaches; the pain being referred

to both sides of the forehead and to the top of the head, but, as a rule, it starts from the seat of the injury. She has a headache nearly every day, and it lasts several hours. She has also had a slight cough for some time.

In November, 1889, she had a convulsion. There was no aura; the head and eyes turned to the right, and the limbs worked. She frothed at the mouth, could not speak, began to stutter, something came up in the throat and then the head turned and she fell. She said that in some attacks she was conscious of what was going on, but she could not control the attack; in other attacks she lost consciousness. After the first attack she vomited. After the attacks she was sleepy and foolish. A month later, in December, she had a second attack. Since then she has had six more, about one attack a week, the attacks coming on in the morning.

Physical examination showed a stout, sturdy, rosy-cheeked girl with a small stellate cicatrix on the forehead, a little to the left of the median line, about an inch from the beginning of the hair, beneath which was an area of rough, irregular bone with some depression. Careful examination revealed nothing else remarkable. She was given fifteen grains of potassic bromide three times a day, and ordered a restricted diet. This was continued until March 5th, when it was omitted for two days, without orders. No indiscretion in diet was committed. March 9th she had a fit, and March 11th another. On the 11th she had a bad headache and cramps in the stomach. The bromide was ordered to be taken four times a day.

March 13th, she had another fit, and on the 19th another, in which the head and eyes turned to the right. She again, on the 19th, had headache and cramps. She was ordered to take thirty grains of bromide, three times a day.

March 26th, she reported an incomplete attack. The attacks have been preceded by marked vertigo.

April 9th. Three fits since last report.

The bromide having apparently failed to control the fits, I thought it advisable to lose no more time, and I advised her to enter the hospital for operation, which she consented to do, and on the 11th of April she was admitted to Dr. Post's service.

April 13th. Last night and this morning she had convulsions in which the head, eyes and mouth were drawn to the right. She was conscious, but she could not control the attack.

April 21st. She has been kept quiet in bed, and aside from a slight tonsillitis, she has been comfortable and there has been nothing to attract attention. This morning she had a convolution, followed by another at noon. These convulsions were general, the legs and arms becoming rigid, the muscles of the face and jaw twitching violently. They lasted four or five minutes. The last catamenia ceased a week ago; the convulsions have never been more marked at the menstrual period.

She had now had twenty convulsions, and bromide seemed powerless to control them. In many of them the signal symptom seemed to be turning of the head and eyes to the right. The centre for this movement is the motor centre nearest the seat of the injury. I thought it possible that a discharge, starting from the old wound, might extend first to this centre and then give rise to a general convolution. The thing to be done was clearly to trephine over the seat of injury,

¹ Read before the Boston Society for Medical Improvement, November 9, 1891.

and to remove, if possible, all cicatricial tissue. She was therefore trephined by Dr. Post on the 24th of April, a button of bone was removed, the dura and a portion of adherent brain-substance excised, and as much of the cicatricial tissue as possible was removed. Some thickened connective tissue was left in close proximity to the longitudinal sinus which could not be removed without cutting the sinus; elsewhere all tissue was removed down to healthy brain substance. The details of the operation will be given by Dr. Post.

The patient recovered well from the ether, but she had a little pain at the seat of the operation.

April 25th. Considerable headache this evening. The pupils are equal; the tongue is protruded straight. She was perfectly conscious. Five grains of antipyrine were given at night to relieve the pain.

April 26th. She felt better and had less headache. Her color was good, and she was bright and cheerful.

April 27th. Some headache, relieved by antipyrine.

April 29th. She felt very well, and was found sitting up in bed reading.

April 30th. She was allowed to sit up with blankets about her, but, instead of sitting still, she walked about the ward and talked with the other patients.

May 2d. Wound dressed. Perfect union by first intention. No redness or swelling anywhere about the wound. The stitches were removed and a small moist corrosive sublimate pad applied.

May 7th. General condition excellent. She was actively employed about the ward. No symptoms. Her health appears perfect.

May 9th. This morning she had a convolution, during which the head became fixed, the eyes were staring, and she frothed at the mouth. There was no twitching. In the afternoon she had another attack in which the face and all four extremities twitched. She was given fifteen grains of potassic bromide three times a day.

May 10th. Two convulsions to-day. The first was not seen until near the close; the second was general.

May 15th. One convolution since last note. Bromide increased to thirty grains.

May 21st. Doing well. Up daily about the ward. General condition excellent. She was put on a milk diet, and she had had no convulsions since the last note.

May 28th. Slight bromide acne. It is almost impossible to restrict the diet. No convulsions.

June 4th. General condition good. One convolution since last note. Bromide increased to forty grains.

June 11th. About ward. Two and one-half minimis of Fowler's solution given for acne.

June 18th. No more convulsions.

June 21st. General condition good. Wound firmly united, only a faint white cicatrix remaining. No more convulsions. Discharged; relieved.

She was seen at various times during the summer by Dr. W. N. Bullard, at the out-patient department, and he has told me that the convulsions then continued. She has now disappeared from observation.

Wm. H., eighteen, single, was referred to me by Dr. J. Richard Taylor, of Sag Harbor, April 28, 1891. His paternal grandfather died of phthisis, his paternal grandmother of apoplexy. His mother is very nervous, one of her sisters died of paralysis, another of

meningitis following influenza, a third of phthisis. The patient himself had been healthy until the age of twelve, when one day, while running with his head turned to the left side, he was struck in the right temple by the fist of a young negro who was chasing him. It is uncertain whether the negro had anything in his hand at the time. The boy was dazed for a time, the eye and forehead were badly swollen, but he made a speedy recovery, and went back to school that afternoon. There was no history of indulgence in tobacco, alcohol or venery, and venereal disease was denied.

In less than a year from the time of receiving this blow, the patient began to have seizures of various kinds. The account of the earlier attacks is not very definite. These attacks have increased in frequency. He now has three or four mild seizures a day, or even more, and, at the most, two or three severe seizures a week. He has been two weeks without a severe seizure, but within the last three months he has had forty-five severe seizures.

The severer seizures begin by turning of the head to the left; the left side of the face, the platysma and sterno-mastoid muscles, and the left arm twitch; the neck is more affected than the face. He sometimes bites his tongue, falls, loses consciousness and passes urine involuntarily. His physician reported that all the severer seizures began with a turning of the head to the left, and the left arm was usually affected. He frothed much at the mouth. Two weeks before coming to me, his physician saw him in a fit, in which he lost consciousness, ejected much froth from the mouth, and belched up much gas. In this attack he walked into the next room, came back and asked for medicine, went back and took it, and, as always happens, obeyed all the commands given. On returning to consciousness, three-quarters of an hour later, he had no memory of what had happened, and asked if the doctor had been there. He walked about with his eyes open and with the pupils moderately dilated.

In other attacks the head turns to the left, he froths much at the mouth, and he will take out his handkerchief with both hands in an aimless fashion. He will start and run, usually to the right with the head turned to the left, upstairs, or back and forth from one room to another. Sometimes he will recover promptly, at other times he will fall and have a convolution, with twitching of all the limbs, followed by rigidity. After these attacks he falls into a deep sleep lasting half an hour to two hours.

In other attacks he begins to stare, presses on the abdomen with both hands, and belches up wind. He talks and answers questions intelligently, but he has no memory of what takes place during the attack. As soon as the attack is over he feels and appears well, but if he has them very frequently he is languid and tired after them.

Finally the patient describes lapses of consciousness, lasting only a few seconds and not noticeable by bystanders. In these attacks the head does not turn. In the minor attacks he chews a good deal, but he does not bite his tongue. They are attended with considerable gastric disturbance, and there is much belching of gas after them. There is never any aura; the fits are about as frequent by night as by day.

Recently he has had a feeling of pressure at the seat of his old injury, especially when fatigued. The memory for every-day events is not as good as it used to be, but the memory for events of some time ago or

for book-knowledge is as good as ever. He is very fond of mathematics, but application renders him worse, so that he has given up school and study. He is a trifle more nervous and irritable than formerly. His general health is good, there is little headache and no visual disturbance, and he eats and sleeps well. No thoracic, abdominal or urinary symptoms.

Physical Examination. — Well developed, fairly nourished. The skin is thick and pasty, with an abundant fine papular eruption on the face, and to a lesser extent over the body. Mesaticephalic: long diameter, 19.2 cm.; biparietal diameter, 15.2 cm.; cephalic index, 79.16. Glabella to inion, 36 cm.; circumference, 56.7 cm.; measurement from one external auditory meatus to the other over vertex, 37.7 cm. Trococephalic and slightly plagioccephalic. A faint scar, the size of a pea, was seen on the right temple just at the beginning of the hairy scalp; there is a point near it which is sensitive to pressure. Pupils equal, 4 mm. in diameter, reacting to light and convergence. Ocular movements good. Field of vision and color sense normal, $vod = \frac{1}{2}$, $vo = \frac{1}{2}$. Fundus oculi normal. No deafness, tinnitus, earache or otorrhoea. Watch heard at five feet, au . Aural examination negative. Mobility and sensibility normal. Knee-jerk and plantar reflex normal. Dynamometer, R. 31, L. 33. Pulse 92-108. Examination of chest, abdomen and urine negative.

Medication had been faithfully tried for years. Hyoscine, hydrobromate and antipyrine had given some benefit, bromide had proved useless, iodide and mercury in small doses had seemed of benefit as a tonic. I agreed with his physician that trephining afforded a chance of relief, and I thought it best to have it done without further delay. He was accordingly admitted to the Boston City Hospital on April 29th.

April 30th. In the afternoon the nurse heard something fall, and found him on the floor with a clonic spasm of all four extremities and of the lower jaw; the spasm was not more marked in any one portion of the body. He frothed at the mouth, and after about two minutes he became rigid and lay in moderate opisthotonus for about three minutes; then he fell into a sound sleep. The head was shaved, the fissures and the tender spot were marked with nitrate of silver, and a corrosive sublimate dressing applied.

May 1st. The tender spot and the scar seemed to be very nearly over the centre for the movements of the head to the opposite side, and this movement was the signal symptom for the majority of the fits. He was, therefore, trephined over that spot by Dr. Post. Almost directly beneath was found a marked bluish white opacity of the pia, but the opacity and oedema extended in every direction under the edges of the trephine opening, so that it was clear that the lesion was diffuse. The details of the operation will be given by Dr. Post.

May 2d. He made a good recovery from the ether, and slept fairly, although he was restless the latter part of the night. In the morning he was comfortable. Temperature 99.5°, pulse 116. In the afternoon he complained of headache and restlessness, and of the tightness of the bandage, which was loosened. Temperature 101°, pulse 132. He was given hydrobromate of hyoscine (gr. $\frac{1}{15}$) at night.

May 3d. Very comfortable. Morning temperature 99.2°, pulse 100. Evening temperature 101.8°.

May 4th. Temperature lower. No convulsions. May 7th. Temperature has not risen again. No headache; good appetite; slightly constipated; sleeps well. May 10th. General condition excellent.

May 13th. Dressing removed. Wound found in perfect condition, healed by first intention. All the stitches, twenty-two in number, were removed. Not a drop of pus was seen. General condition excellent, and he complains of no trouble in the head. Dry dressing.

May 15th. Had a convolution.

May 20th. No dressing on head now. Yesterday he had four mild convulsions. He became unconscious for a few minutes, pulled at his lip, the pupils dilated, then he came to himself, and fell asleep. Up a few hours yesterday and to-day.

May 21st. Another convolution.

May 22d. Discharged. Not relieved.

June 4th. No attacks since May 26th. He has had thirteen since the operation. I saw him in one, which began by turning of the head to the left, and involved the left arm. He was given twenty grains of bromide of sodium and ten minims of fluid extract of cannabis indica, which seemed to control the attacks somewhat. A few days later he returned home.

A letter from Dr. Taylor, of the date November 1, 1891, gives further information:

"Mr. H. is at home, and I think has not materially improved since the operation. For three weeks after the operation he was apparently well, then had several days (two or three) in which he suffered from slight attacks characterized by temporary loss of consciousness, with profuse flow of saliva and unintelligible muttering and mumbling — each attack lasting from three to five minutes. Between each series there is an interval of ten or twelve days, in which he apparently enjoys very good health. Since the operation he has had ninety slight attacks and four severe convulsive seizures, in which the movements were noted on the left side, involving the muscles on the left side of the neck, chest and left arm. In running away on one occasion, he ran in a circular course to the left. His appetite is very good, the bowels act well, and he rests well, though a light sleeper. He devotes too much time to thinking about his condition, though I keep him busy with out-door pursuits as much as possible. He uses Brown-Séquard's mixture of iodides and bromides and fluid extract of cannabis indica."

These two cases may serve, perhaps, as a text leading to a discussion of the propriety of trephining for traumatic epilepsy. The possible scope of the operation has been extended of late, so that there are now two questions to consider: the propriety of trephining in cases where epilepsy has declared itself, and the propriety of trephining in cases of head injury as a means of preventing epilepsy.

The operative proceedings in cases of epilepsy have been further extended, in that operation is undertaken not only for the elevation of depressed bone, the removal of cicatrices, etc., but also, in Jacksonian epilepsy, for the excision of the apparently intact cortical centre from which the discharge arises.

Excision of the cortex has been done in comparatively few cases, and the results, as a whole, have not been very satisfactory. In several cases, however, temporary relief has been obtained, and in a few cases the fits have not recurred up to date, a period, however, of only two or three years. Even such a limited

percentage of success, however, renders the procedure justifiable in severe cases.

Trephining for the purpose of removing depressed fragments, cicatrices, etc., is an operation of much longer standing and of a less serious character. Cases are on record showing relief and even recovery following such an operation so as to render its performance perfectly justifiable. It may be well, however, to consider some of the factors which render the success of either operation doubtful.

The theory advanced by Hughlings-Jackson, that local irritation of a cortical motor centre may lead to a motor discharge from that centre, and perhaps from others near it, is well known. Following upon it came the corollary to remove the irritation from the centre as a prevention of subsequent motor discharges.

In cases of injury to the head, however, we may have two factors: first, a general commotion of the contents of the cranium, and, second, a local injury of the skull and the brain beneath it. The first factor is always present, the second is not constant.

We know that such a commotio cerebri may give rise to various diffuse structural changes in the brain, and, as a result of such changes we may have epilepsy. It is, moreover, now well-established that partial epilepsy, of the so-called Jacksonian form, may be the result of diffuse changes, of lesions remote from the affected centre, of poisoning, as in uremia, and of various unknown diffuse molecular (?) changes as in true epilepsy and hysteria. Commotion is therefore a possible causal factor in all cases of traumatic epilepsy, and if it be the cause, the removal of any local lesion will be powerless to effect much relief. My second case shows clearly a diffuse lesion, giving rise to partial epilepsy, and due, not improbably to the diffuse, rather than to the local effects of the blow, in what was probably, from its heredity, an invalid brain.

In other cases we may have epilepsy as a result of the local irritation, although, as the general commotion can seldom be excluded, this is less absolutely certain. Granting the fact, however, we find, not infrequently, a history not unlike that of my first case. A fairly healthy brain receives a local injury, and, for a long time, resists its effects. Finally the resistance yields and an epileptic attack follows. In the present case the brain resisted four years and a half. In that period there is time for various secondary processes (inflammatory changes starting from the seat of injury, secondary degenerations of association tracts, etc.), to develop. Hence, by the time the epilepsy has manifested itself, the other diffuse changes are well-advanced. Although the local irritation may be removed soon after the epilepsy appears (after only twenty seizures, as in this case), the secondary changes may keep up the trouble, and the operation may prove futile. With an invalid brain the resistance is less prolonged, there is therefore less time for secondary changes, and the removal of the local irritation may thus give more relief.

It is unfortunately by no means easy to determine how far either one of these factors preponderates in the causation of epilepsy in the individual case, nor can we, as yet, decide whether the trouble be due to general commotion or to local irritation. Hence every operation must be merely tentative, and the result, as follows from what has been said, will always be doubtful and not infrequently negative.

In view of the gloomy prognosis of traumatic epi-

lepsy, even after an operation, the question of preventive treatment by early operation naturally arises. If epilepsy be due to a local irritation, and if that irritation be promptly removed before the secondary changes above referred to have set in, the chances for recovery are naturally much greater. The risks of such an operation are, of course, comparatively slight, although statistics are lacking to enable us to give exact figures. Hence, a year ago, Horsley urged that every fracture of the skull be immediately trephined, and Agnew, at Washington, assented to that view so far as to urge that every depressed fracture be trephined.

It is certainly justifiable to do much to prevent epilepsy, and in some cases this procedure will probably be successful. Most men to-day, I think would trephine such a case as my first one at once, and, if this had been done, I think the epilepsy would have been prevented. In my second case, however, no one would have thought of trephining, and I doubt if early trephining would have done much good.

We lack information on two important points. The first is how many cases, the second is, what cases of fracture of the skull will be followed by epilepsy. From May 1, 1882, to January 1, 1891, 122 cases of fracture of the skull have been discharged relieved from the Boston City Hospital. During the same period 184 new cases of epilepsy have presented themselves for treatment in the out-patient department. These figures have some slight value in showing the relative frequency of the two conditions. I have certainly seen one-third and probably one-half of the epileptics. Of those that I have seen only a small proportion, not over ten per cent., could be regarded as traumatic. My figures are of course vague, but they would lead us to suspect that only a minority of the cases of fractured skull become epileptic.

Dr. J. J. Putnam has recently called attention to the possibility of epilepsy being due to the diffuse changes above referred to, and he has also emphasized the fact that in many cases, even of depressed fracture, the depressed inner table of the skull presents a smooth, rounded surface, which cannot act as a local irritant.

Considering, then, the probability that a general commotio cerebri is a prominent factor in the causation of traumatic epilepsy, that many fractures do not give rise to local irritation, and that, probably, a majority of the cases of fractured skull are never followed by epilepsy, I am disposed to believe that preventive trephining is hardly warranted unless there be distinct cerebral symptoms at the time, which would indicate its performance independently of any consideration as to subsequent epilepsy, or, in other words, that preventive trephining, *per se*, is not, as yet, justifiable. If we could tell what cases are likely to be followed by epilepsy it might be different, but, as yet, we have no means of deciding upon this point.

SURGICAL DETAILS, BY DR. POST.

It seemed to me, at first, that the operation was so simple that there was nothing to say upon the purely surgical details; but thinking it over a little made me feel that when it had become possible to remove a piece of bone from the skull with a bit of the meninges with an assurance of primary healing without special constitutional disturbance, that there might be something worthy of mention in the methods.

Briefly, the details of the two operations were as follows:

Kate F. entered the hospital on April 11, 1890. Soon after entering she developed a tonsillitis, and on the 17th the temperature was 101.8°. The operation was done on the 24th; her temperature being normal in the morning of that day, before the operation, and 99° in the evening, after the operation. On the next evening it reached 101.2°, gradually falling from that time, it became normal again on the fourth day.

Preliminary to the operation, the scalp was shaved and cleaned; a semicircular flap with the scar in the centre was cut and turned back; a cicatrix in the bone was exposed, which was included in the trephine button one inch in diameter which was removed.

The bone was unusually thick on one side, and was united to the dura in the centre. When separated, there was slight bleeding from the torn dura. A piece of the membrane, the size of the trephine hole, was cut out, which seemed thickened, and was adherent to the brain beneath. The small adherent portion of brain substance was removed. The wound was irrigated with boracic acid solution and closed with silk sutures, and a baked dressing applied. No drainage-tubes were used.

On the fifth day (29th), the patient was found sitting up in bed and reading. On the sixth, she was allowed to sit up in a chair with blankets, but walked around and gossiped with the other patients.

The trephine button was an exceedingly interesting one. It was, as mentioned, double as thick on one side as on the opposite. On section, it showed a sclerosis of the bone at the point of injury, which entirely obliterated the diploë. A minute canal ran from the outer to the inner surface. The inner face of the bone was as smooth as though it had never been injured. No operation at the time of the injury could have left a smoother surface.

W. L. H., aged nineteen, was operated on May 1, 1891. His scalp was shaved and thoroughly scrubbed. A semicircular incision was made about the spot previously decided upon. Three buttons, five-eighths of an inch in diameter, were removed and united by bone-forceps, making a hole some two inches in diameter. The bone was rather thin, but there was a troublesome hemorrhage from the diploë, which was most easily controlled by a wax or putty made after a suggestion of Mr. Horsley. The flap was sutured without drainage-tubes, and a dressing was applied of baked gauze, the inner layers of the dressing being moistened with corrosive sublimate solution, 1 to 3000.

On the evening of the third day his temperature was 101.2°, the highest point reached. On the seventh day the record reads, "Temperature has come down steadily. No headache."

On May 13th the dressing was removed for the first time, and the wound was found in a perfect condition. It was entirely healed by first intention. All the stitches, twenty-two in number, were removed without disclosing a drop of pus. His general condition was excellent, and he complained of no trouble in the head.

In both cases the semicircular flap was used, which differs very decidedly from the old crucial incision. It is much easier to control, a single pair of forceps holding it out of the way instead of four, as in the crucial incision. It gives better access to the field of operation, and when the operation is done it covers the wound completely, like the lid over the top of a flask;

but its great advantage is the fact that the edges come together perfectly giving a better opportunity for immediate union. Another advantage of the flap is that it allows the raising of the periosteum, with all the soft structures, so that the periosteum is preserved comparatively uninjured, and replaced with ease in its proper position.

Such a flap, like any incision in the scalp, is liable to bleed freely; and if an operation is prolonged, as it was in the first operation where the bit of bone to be removed had sides of very unequal thickness, it is worth while to take some pains to control the loss of blood, which amounts to a good deal in the course of a long operation. With our modern hemostatic arrangements it is comparatively easy, but it is necessary to think a little about wounding the flap, as one is extremely anxious to get first intention. For that purpose I took pains never to clamp the whole thickness of the scalp, but where it was impossible to secure the artery in any other way, a stitch was taken and tied tightly, compressing the artery in that way, the stitch afterwards being removed, of course.

In enlarging the trephine wound, instead of taking out a second or third trephine button; I prefer to take out a single button, and enlarge the wound with the gouge forceps. It can be done with a pretty thick skull, but hardly possible with a skull of the thickness of the first button I showed.

The putty, suggested by Mr. Horsley, the exact formula of which I do not know, but an imitation of which has been made, is extremely convenient in controlling the bleeding from the skull itself. It is very desirable to have an unobstructed view of the meninges after the bit of bone has been removed, and by stuffing the bleeding points of the skull with this wax one not only controls the hemorrhage, but secures an unobstructed field.

In closing the wound it seems to me that it can never be necessary to sew together the membranes. It would be a much greater disadvantage to leave a stitch beneath the skull than any possible advantage that could accrue from it.

The replacement of bone after the operation is a question that is sometimes considered. I did not do it in either of these cases, nor in any of the other cases I have trephined for traumatic epilepsy. It seems to me that the object to be attained by the operation is the removal of that bone, and once removed there is no object in replacing it, even if nothing is found beneath it, and I cannot but think there may be an advantage in giving a little extra space for the brain to expand.

I did not put any drainage beneath these flaps, but closed them tightly. I will not say no drainage should ever be used. If a great deal of damage has been done, and one expects considerable hemorrhage or leakage of any sort, drainage may be desirable; but ordinarily speaking, where there has been a clean wound and comparatively little damage done, I prefer to close the wound immediately without any drainage at all. The advantage of no drainage was illustrated particularly in the second case, where the patient went thirteen days without any dressing. Had there been a drainage-tube of any sort, a dressing would certainly have been necessary in a much shorter time. But when I say that these wounds were closed tightly, perhaps I ought to explain that I took pains in these cases to carefully adjust the flap so that first intention was

possible everywhere, but at the same time I did omit a stitch or two, so that if there was any oozing or anything that needed to find exit, there would be a weak spot in the suturing where it could find exit more easily. The wounds were then covered closely with a baked dressing that is highly absorbent, so that little vacant space is left to fill with serum, and whatever oozes out is quickly taken up by the dressing.

The subsequent care of the cases was quite simple. I must confess that the second of these cases gave me a little anxiety for a day or two, as he gave me the impression of being quite sick during the time. In the first case the only anxiety was to know how long to keep the girl in bed. She would have been glad to get out of bed the second day, and when she was, with hesitation, permitted to sit up on the fifth day, she surprised us somewhat by running about the ward in the manner that has been mentioned. Whether any possible damage could be done to a patient by getting up and running about too early is a question in my own mind. I kept the girl quiet as long as I could, but at the end of a week she was practically beyond control. The young man I kept in bed much longer, with the intention that if there was any advantage to be gained from quiet after the operation, he should have it.

The danger of the operation seems to be very slight indeed. I suppose it would be the common feeling of all surgeons at present that while no operation should be done unnecessarily, there is practically no more danger in trephining an adult in good health than in going through the soft parts.

OCULAR HEADACHES.

BY FREDERICK E. CHENEY, M.D.

Instructor in Ophthalmoscopy, Harvard Medical School; Assistant Surgeon to the Massachusetts Charitable Eye and Ear Infirmary; Ophthalmic Assistant to the Out-patient Department of the Massachusetts General Hospital.

If a patient complains of headaches, pain in the eyes and poor vision, the probability of a refractive error being the cause is now very generally recognized. If, however, the sight is apparently normal, there is little or no discomfort in using the eyes for near work; and especially if the headaches are not frontal, an ocular defect as a possible cause does not usually receive much consideration. It is, nevertheless, a fact that a large number of patients, who have good sight both for distance and near, and who are able to read and sew for hours at a time without discomfort, suffer from migraine and neuralgic headaches, frontal, temporal, occipital and general, that can be entirely relieved by the correction of some refractive or muscular defect.

Strümpel, in his "Text-Book of Medicine," after mentioning a number of remedies that can be tried in the treatment of habitual headaches, concludes the chapter with the following paragraph:

"We can sometimes do the patient good service with remedies mentioned, but in other cases the evil obstinately defies all attempts at cure. Then, however, the patient has still the encouragement left that the disease often ceases at least spontaneously in advanced age, after lasting for years and years."

The oculist is consulted by many patients who give a history of past headaches that have lasted for "years and years," and that have finally ceased spontaneously.

They usually present themselves between the ages of forty-five and sixty, and are found to have a moderate degree of astigmatism or hypermetropia, the correction of which earlier in life might have prevented years of suffering from habitual headaches. It is not difficult to understand why reflex ocular headaches should cease at this time of life. The emmetropic eye, as we know, sees distant objects clearly without any effort of the accommodation, and at the reading distance by increasing the convexity of the crystalline lens three dioptres. The hypermetropic or astigmatic eye, on the other hand, finds it necessary to accommodate for distance as well as for near, if clear vision is to be obtained. As an illustration, if an individual with a hypermetropia of three dioptres sees distant objects clearly, he must use three dioptres of accommodation, — the amount used by the emmetropic eye in reading, — and six dioptres, or double this amount, for his near work. In early youth, when the accommodation is most active, this extra work is accomplished without much difficulty; as he grows older, the effort to maintain clear vision becomes greater and greater, in consequence of the natural failure of accommodation until, with advancing years, the time comes when the power is not strong enough to overcome the defect, and soon ceases to attempt it. So long as the struggle for clear vision continues, so long may we look for headaches or other reflex troubles as a result. With a cessation of this struggle what is more natural than that "the disease" should "cease at last spontaneously after it had lasted for years and years." Another interesting point in connection with the fact, that symptoms of eye-strain are present only when an attempt is made to correct the defect, is, that individuals having very high degrees of hypermetropia or astigmatism are much less liable to pains in the eyes and headaches than are those having small and moderate degrees. A patient with four or five dioptres of astigmatism will consult an oculist, in a large majority of cases, not because he has asthenopia or severe headaches, but on account of poor vision. In other words, he has found it impossible, even by the greatest effort of the accommodation, to obtain clear vision for any length of time and has ceased early in life to make the attempt. On the other hand, we see patients with one-half or three-quarters of a dioptre of astigmatism who see perfectly well both for distance and near, but who do so at the expense of an extra strain on the accommodation and who often suffer severely in consequence.

The following cases which I report are not exceptional, but will serve to emphasize one or two points which I wish to make prominent in this paper, namely, that patients may suffer for years from ocular headaches and yet have little, if any, local eye symptoms that will suggest their origin. The sight may be good, they may be able to use the eyes constantly for near work with little or no discomfort, and in some cases the pain may be confined principally to an area more or less remote from the eyes.

CASE I. A lady, forty-five years of age, was first seen April 28, 1891. She has always had headaches, usually as often as once in two weeks, frequently two or three in a week. During school life had sick headaches, but the last few years they have been mostly neuralgic. Pain usually begins over the eyes and becomes general, but is sometimes confined to occipital region. She has always seen perfectly well for distance and near and the eyes have never ached until

within the last year or two. An examination under homatropine gave the following results: vision of the right eye normal, hypermetropia two and a half dioptres, vision of the left eye normal, hypermetropia three and a quarter dioptres, no insufficiency or other ocular defect. Glasses correcting the refractive trouble were ordered for constant use. The patient reported after using glasses for five weeks, that there had been no headaches or pains in the eyes during that time. She was again heard from five months later, and there had been no return of the headaches.

CASE II. A gentleman, fifty-two years of age, consulted me July 20, 1889. The trouble complained of was poor sight for distance and near. Until within the last two or three years, he has seen perfectly well for distance, but has used glasses for reading for about seven years. The eyes have never ached or given other signs of being strained. He has been subject to severe neuralgic headaches all his life. Until lately he has had from one to three attacks a month, now much less frequent and not as severe. They are usually at the back of the head, the pain extending into the neck and shoulders, sometimes at the side of the head, rarely over eyes. Upon examination he was found to have hypermetropia of one and a quarter dioptres in the right eye, and one and three-quarters in the left. With correcting glasses, distant vision was normal. No insufficiency or other ocular defect. Glasses correcting the hypermetropia were ordered for distance and appropriate ones for near work. There is little in this case that would suggest eye-strain as the cause of the neuralgia, but the probabilities are, that if glasses correcting the refractive error had been worn constantly from early youth, the patient would have been saved much suffering. The good vision he has enjoyed for years has been obtained by overworking the ciliary muscle. The inability to do this work results in a failure of sight, at about which time there is also a marked decrease in the frequency and severity of the headaches.

CASE III. A gentleman, twenty-five years of age, book-keeper, first seen February 2, 1890. He has had severe headaches for a number of years, top and back of head. Has dull pain in the head most of the time. Lately has had dizzy spells and occasional pains in the eyes at night. Sees perfectly well both for distance and near. Upon examination, under homatropine, he was found to have three-quarters of a diopter of hypermetropic astigmatism, each eye, axes vertical. Eyes otherwise normal. Glasses correcting the astigmatism were prescribed for constant use. The patient reported three months later that the headaches and dizzy turns had ceased soon after he began to use glasses and had not returned.

CASE IV. A gentleman, forty-one years of age, first seen May 6, 1891. He had had headache for a number of years, frequent, but not of sufficient severity to confine him to the house. Usually wakes with a headache if he has been to the theatre the night before, or read late. The pain is frontal and in the top of the head. Has always been a great reader. Sees perfectly well, and eyes have never ached until lately, and not enough now to prevent his using them a number of hours daily for near work. Upon examination he was found to have a quarter of a diopter of hypermetropic astigmatism in the right eye, and double this amount in the left, axes vertical. Glasses correcting the defect were prescribed for constant use. He was

heard from about four months later, and there had been little or no headache since using them.

It is unnecessary to mention other cases, which would simply be a repetition of histories that are familiar to every practitioner. All functional headaches do not of course result from eye-strain, but eye-strain is a sufficiently common cause to make an examination of the eyes advisable when internal or other treatment does not result in a cure after a reasonable length of time. A dose of phenacetin, antipyrine, or of various other remedies will often result in a cessation of pain, but they may also prove of equal value in controlling the neuralgic pain which accompanies iritis; and yet the iritis, the cause of the pain, is probably neither better nor worse for such treatment. It is impossible to say just what per cent. of functional headaches result from eye-strain, but I should be very much surprised, if out of one hundred unselected cases, at least one-half of fifty per cent. were not greatly benefited or entirely relieved by the correction of some refractive or muscular defect. An occasional headache may, of course, occur in the most pronounced ocular type, even after the trouble is fully and actively corrected, for the reason that the proper position of the glasses before the eyes is not always maintained, and their constant use is even neglected, but that the relief will be such in this per cent. of cases as to leave little doubt in the minds of the patient and physician as to the origin of the trouble, I most certainly believe.

To show that this is not merely the enthusiasm of a specialist, I may say that my friend Dr. G. L. Walton has recently assured me that in cases complaining of cephalgia, and especially migraine of long duration, after eliminating organic diseases and toxic and syphilitic influences, his first suspicion is that an error of refraction exists, a suspicion so often verified by experience, that he considers the estimate above named a very conservative one.

It is not difficult to see why ocular defects should be such a potent factor in the causation of headache. In our present civilization, where the ability to read and write is so general, and where the demands made upon the eyes for near work are so rapidly increasing, we find ourselves provided with visual organs that are by no means perfect in their optical construction, though well adapted to the requirement of the savage and even to the larger proportion of our ancestors of a hundred and fifty years ago. To the student, the bookkeeper or the sewing woman, the ability to see distant objects clearly is but of secondary importance; the thing most to be desired is the ability to see near objects clearly, with as little muscular effort as possible. The individual with a myopia of three dioptres would seem, therefore, best fitted for an occupation requiring the long-continued use of the eyes in near work, in that no accommodation effort is necessary for clear vision at the reading distance.

In conclusion, I wish to say a word in regard to the advisability of correcting ocular troubles in the more serious forms of functional nervous disturbances. To say the eye-strain is a very frequent cause of epilepsy and chorea, would be to mark one's self as an enthusiast; but I am thoroughly convinced that many cases can be relieved indefinitely by a correction of some refractive or muscular defect. The expression "relieved indefinitely" is used advisedly, in preference to "cured," for the reason that eye-strain cannot be regarded otherwise than as an exciting cause in precipi-

tating the nervous affection, a predisposition to which already exists. If an epileptic is found to have a refractive error, and if a correction of this error results in a cessation of the attacks, the treatment cannot be regarded as valueless because the trouble ultimately returns. It should rather be regarded as a proof that reflex irritation is capable of precipitating the attack, and should lead to a careful search for other possible exciting causes.

Clinical Department.

A CASE OF FUNCTIONAL MONOPLEGIA IN A MAN, DUE TO TRAUMATISM: RECOVERY.

BY JOHN G. BLAKE, M.D.,
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AND MORTON PRINCE, M.D.,
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Department.

THE case which we are about to report should be of interest to the general practitioner as well as to the neurologist, because it shows the degree to which paraparesis may develop after an injury and yet be functional, and the possibility of recovery from such a condition. The case is also interesting in many of its details, being a typical example of so-called hysterical or functional paralysis of the type made classical by Charcot. The patient met with the accident in the following way: He was standing on a board which was lying upon the ground when one of the derricks of the new court-house fell, striking one end of the board and tilting the other end violently into the air. The man was thrown over backwards and received a violent shock although no external signs of injury at the time could be detected. The date of the accident was November 9, 1887.

The physician who saw him immediately after the accident, stated that the patient was brought to his office on the back of another man, and that he (the patient) said he had been hit on the leg and back and he could not move his leg without pain. There were no visible wounds on his body.

Dr. Blake saw him one month later; at that time he was in bed. There was entire loss of power and sensation in the right leg, and he complained of distress and pain in his stomach for which he required opiates. This condition had existed since the accident, but the gastric symptoms about this time were worse.

He was seen by Dr. Walton April 22, 1888, five months after the accident. Dr. Walton's notes, which he has kindly given me, show that his condition at this time was practically the same as when seen later by the writers in consultation, excepting that pain in the stomach, headache, and pain in the right leg and back were more prominent symptoms, and were said by the patient to be more severe than immediately after the accident. Dr. Walton also noted an area of numbness in the lumbar region. This was not afterwards noticed, if present.

The writers found his condition January 30, 1889, fourteen months after the accident, to be as follows: The right leg was paralyzed. This paralysis was absolute, or nearly absolute, so that he had no control over it whatever. There was also complete loss of the tactile sense and of the sense of pain from the knee down. The most severe pricking and pinching was not felt, and the strongest faradic current was only

slightly appreciated on this part of the leg. The man walked with crutches, dragging his right foot along the ground. The muscular sense of the right leg was also lost. More careful examination, however, showed that the disability was more extended than this, and although the paralysis and anesthesia appeared to be limited to the right leg there was a general weakness of all his muscles more marked on the right side, though not amounting to absolute paralysis. And although the absolute anesthesia was sharply limited in a typical way by a line at the level of the knee, yet, when tested by the asthesiometer, it was easy to make out that there was a blunting of the sensation over the whole right side. On the front it was limited by the median line of the body (limiting line of the back not determined). More than this, there was impairment of all the special senses, the impairment being more profound on the right side. There was great loss of acuteness of vision in both eyes, so that he was obliged to hold a watch and large printed letters close to his eyes to see. There was absolute loss of the perception of colors in the right eye, and the left only recognized red and (temporarily) green. There was moderate limitation of field of vision in both eyes. The hearing of the right ear was about $\frac{1}{3}$, and of the left $\frac{4}{5}$ tested with the watch. The drums were normal.¹ Taste was blunted on the right side of the tongue and smell on the right side of the nose.¹ His general condition was that of great debility; he was pale, anaemic and generally weak. He was very easily tired, as, for example, by the examination.

Dr. C. F. Folsom also saw this case in consultation with the writers and all agreed it was one of hysterical paralysis. It may be here mentioned that the man was in no sense of the word hysterical or emotional in the popular sense, a condition which is often thought to be essential in this form of paralysis.

Our reasons for diagnosing functional and not organic disease were as follows: Although there was loss of the plantar reflex on the right side, the cremasteric and abdominal reflexes were present and the knee-jerk, contrary to the customary condition in organic disease of this duration, was absent on the right side, although present feebly on the left. Nor was there any rigidity or spastic condition of the paralyzed limb, but the leg was limp and flaccid. It will be remembered that a monoplegia due to organic cerebral disease must be caused either by a very limited lesion of the internal capsule or by disease of the cortex; in either case, when such paralysis is absolute, and after it has continued for any great length of time, descending degeneration takes place along the motor paths and a spastic condition of the limbs result with increase of the deep reflexes.

The gait is also characteristic owing to the spastic condition of the leg. If this case were to be attributed to such cerebral disease the implication of the special senses would require its localization in the neighborhood of the internal capsule. But lesions of this region do not produce amblyopia of both eyes, but hemiopia. This is due to the involvement of the optic radiations, that is, the prolongations of the optic nerve on their way from the optic thalamus to the occipital lobes.

Although there is much dispute amongst physiologists, whether there is any region of the cortex, de-

¹ This is stated from memory, no note having been made at the time though these particulars were included in the examination.

stinction of which produces amblyopia in both eyes, and although Ferrier maintains that lesions of the angular gyrus has this result in monkeys and in dogs, there is no clinical evidence that such is the case in human beings or that when such amblyopia occurs it is not due to functional disease. The way in which this man dragged his foot was also very characteristic and the absence of paralysis of the face, though not of great importance, had some significance. It is an interesting fact that, although there was no atrophy of the paralyzed muscles, they did not respond as well to the faradic current as did those of the sound leg. As a suit for damages was in progress, it was agreed, in order to eliminate any suspicion that might be raised regarding malingering, that the patient should be etherized. He submitted to this test, but no movement could be detected in the paralyzed muscles. A verdict was given by the jury for \$6,000.

Shortly after the trial the patient sailed for Italy. It so happened that a friend of the claimant and one of the witnesses also went to Italy about this time. A short time ago she returned and reported to me that she had been to see the patient at his home and found him apparently perfectly well. She said that they had taken long walks together, climbed hills, etc.; that he had recovered the loss of his eye-sight and was practically well. She said that he told her that his recovery began to take place shortly after his arrival and was rapid. This was about three months after the settlement of the case.

Cases like this one are not very uncommon and form quite a percentage of the cases that come into the courts. The claim is generally set up that they are due to organic disease and that they are incurable. The ending of this one illustrates the possibilities of a favorable issue in a comparatively short space of time, although it must not be denied that many such cases persist in *statu quo* for a great length of time.

ADENDA.

The skin of the right leg was colder to the touch and by the thermometer than that of the left. The grasp of the right hand ranged from twelve to twenty degrees, of the left from twelve to thirty, by the dynamometer. No ataxia. Both thighs and legs measured the same. The left eye perceived yellow and green as white or light shades, blue and violet as black. He complained of steady dull pain in the abdomen between epigastrium and sternum.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

O. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, November 9, 1891,
the President, DR. FREDERICK I. KNIGHT, in the
chair.

DRS. P. C. KNAPP and ABNER POST reported

TWO CASES OF TREPHINING FOR TRAUMATIC EPILEPSY.¹

DR. JAMES J. PUTNAM read a paper on
THE RELATION OF EPILEPSY TO INJURY OF THE
HEAD.²

DR. J. C. WARREN: I think the gentlemen who have already spoken have covered the ground so thoroughly that I have nothing special to say on the general subject.

From the surgeon's point of view the question of interference at the time of the injury is one, of course, of great importance, particularly after what has been said by the gentlemen this evening. We see what is possible to result from local irritation, and we have got to determine in a case whether there is sufficient local trouble which is likely to remain and be progressive afterwards to authorize us to interfere. I do not feel, as a result of my experience, authorized to interfere in cases of simple fracture, even if there are some localizing symptoms at the time, unless those symptoms have a certain amount of permanency showing perhaps the presence of clot underneath the point of injury. But if there is any depressed bone, it seems to me that I should not hesitate to interfere in any case, whether there were localizing symptoms or not. It seems as if under those circumstances one ought to make an exploratory incision through the bone and see how much injury there has been to the inner table and perhaps to the membranes of the brain. We may have little or no trouble, but we have done little or no harm to the patient, removing simply a button of bone. We may have a greater amount of injury to the inner table than is apparent to the outer table, and may have one of those sharp points which is going to be a source of meningeal and perhaps cortical irritation. It is not necessary in many cases to have depression of the inner table in order to produce considerable irritation. We may have persistent headache and perhaps symptoms pointing to meningeal irritation and perhaps irritation of the brain itself as a result of direct injury to the bone, not simply a contusion of the bone, but perhaps a depression of the outer table. We may have a localized ostitis, which may communicate itself to the meninges, and may be the result of thickening of the bone and some dural irritation, which may lead subsequently to the necessity of an operation. I have such a case in mind where a boy was kicked by a horse, and where there were two depressions something like those shown in the button Dr. Post has removed, and with some irregularity in the bone. In this case there was persistent headache of such character as to prevent the young man from pursuing his studies, which has been entirely relieved for a year now by removal of a button of bone. The dura was found adherent to the bone at the point of trephining. Possibly in those cases there is some anchoring of the brain, that is, adhesion of the brain to the dura, and irritation every time there is change of the volume of the brain, due to variation in the circulation or whatever movements are possible. That condition known as anchoring of the brain gives rise to considerable irritation, and is one to be thought of when we have to settle the question of an operation.

In regard to the details of the operation, they are so familiar that I think there is not much to be said. Dr. Post has already described that. I would merely mention the points in which I have acted slightly differently. I am in the habit of suturing the dura. I do not know whether in some cases hernia of the brain might result if this were omitted; but it brings the parts back perhaps a little more to their natural condition than if suturing is not done.

In regard to the replacement of the bone, I have done that in one instance only in these operations,

¹ See page 5 of the Journal.

² See page 1 of the Journal.

and that with entire success. It seems to me as if in cases where a considerable portion of bone was removed, it was of advantage to have a restoration of the cranial vault after the operation. It gives a little better security to the individual afterwards, although large holes from the removal of the button have been made without subsequent inconvenience to the patient. I had a relative who was operated on by Dr. John Warren, in his youth, for compound depressed fracture of the skull. A large number of fragments were removed. There was a space perhaps three by two inches in the temple. That gentleman lived to be over eighty, and never had the slightest trouble or inconvenience from that soft place in his head.

The question of drainage is an interesting one to surgeons, and I am inclined to agree with Dr. Post that drainage is not necessary in these cases. I have tried both ways, and find they do as well without. My custom, following Dr. Keene, is to leave a slight strand of gauze between the stitches for twenty-four hours, to let out the primary oozing of serum that takes place after any operation. I think that patients are a little bit more comfortable after a precaution of this kind than without. The symptoms of pressure are less. Possibly it may save an attack or two of epilepsy.

In regard to the after-treatment, it seems to me it is important that patients should be kept quiet. I do not understand the modern departure from the old custom, which was that patients should be watched carefully after head injuries for a month at least. Dr. Keene, in one of his first cases, allowed the patient to walk a half-mile on the fifth day, and many patients are up and about in five days. No doubt that can be done, and it is an interesting testimony of the brilliant results of aseptic surgery; but at the same time it seems to me that the brain needs rest after such operations as this, where it has been exposed, and particularly where irritation seems to threaten such grave results, a considerable period of time should be allowed to elapse before any excitement should be produced. I am in the habit of keeping the patient pretty quiet for two or three weeks after the operation.

There was one interesting point in the discussion on this subject in Washington in respect to the after-treatment in these cases, namely, that bromides and other remedies should be used to wipe out the epileptic habit. How much there is in that point I am not able to say. That the hyperesthesia which tends to exist in all recently healed wounds should be kept down to the minimum, and the sensitive cerebral structures blunted as much as possible, seems to me to be a rational idea, and worth a thorough trial.

DR. M. H. RICHARDSON: It seems to me that epilepsy is so serious a disease that almost anything is justifiable, even if it promises nothing more than temporary relief.

In all compound depressed fractures, with or without symptoms, and in simple depressed fractures with symptoms, an operation should be performed at the time, and the fragments should be removed. I believe that there should be no interference in linear fractures or in compound fractures without depression unless there is some evidence of injury to the brain or membrane. Nevertheless, it is to be borne in mind that there may be a comminution of fragments of the inner table with slight depression and very little apparent trouble. I have operated on many cases in which,

though externally there appeared to be little if any comminution, I have found many sharp fragments in direct contact with the dura, and that membrane occasionally lacerated.

I think, from experience gained from my own cases and those of others, that operations for epilepsy promise very little indeed; yet I do not believe that the time has come to abandon all operative measures. All my operations, without exception, have been failures where I have removed depressed fragments after the epileptic habit had become established. In some of them there has been marked displacement of fragments and pressure upon the brain. In none of these cases have I opened the dura mater, however, and I would therefore admit that the operation has not been performed as thoroughly as it might have been. In those cases of others where I have seen radical operations performed, with one or two exceptions, nothing was evident to me at the time to account for the irritation, beyond an adhesion between the dura mater and the brain. In such cases it seems to me absurd to expect much relief except from the operation *per se*, as mentioned by J. William White. Where the operation consists merely of a separation of adhesions between the brain and its membrane, it seems to me that we have no reason to expect much benefit.

The practice of using decalcified bone-plates to assist in closing the skull-opening does not seem to me justified by any experience thus far gained, clinical or experimental. In the surgical application of all animal derivatives we rightly depend upon absorption. Bearing in mind how difficult if not impossible it is to render bone-plates aseptic, their use, it seems to me, is not only of no value, but even dangerous.

As to the matter of drainage, I would agree with Dr. Warren in giving up drainage if he continues to use a strand of gauze in the angle of the wound. It seems to me, however, that that is drainage, and of the very best kind. I, for one, am not willing to give up drainage, except in very rare cases. I believe that this principle has played a most important part in surgery, and that the time has not come when we may safely abandon it. In Dr. Post's case provision was made for the escape of fluids by leaving a gap here and there. That certainly is drainage. I would certainly agree that the use of drainage-tubes should be very limited, and believe that there is nothing better than the gauze (wick) drainage, especially in abdominal surgery. This is quite different from sealing up a wound completely, which seems to me a very questionable procedure, except in rare cases. I have reached this conclusion after considerable experience, more especially in breast extirpations. In many cases the wound became distended with blood-clot which, though aseptic, required several weeks for absorption. Drainage for the first twenty-four hours would have prevented a tedious convalescence.

As to the frequency of traumatic epilepsy, I think it is evidence of some value that we see so few cases of this lamentable condition in comparison with the number of fractures of the skull. From 1880 to the present time there have been numerous cases of fracture of the skull treated at the Massachusetts General Hospital by operation or otherwise. So far as I have been able to ascertain, not one of these cases has ever returned for the treatment of subsequent symptoms. In some, from my personal knowledge, I can say there has been no trouble whatever seen after depression

unrelieved by trephining. It cannot be true that any considerable number of these persons developed epilepsy without seeking relief at the same hospital. Even in cases of depression without symptoms and without operation, I believe the existence of irritation symptoms will rarely be met with.

Nevertheless, as I have already said, I believe the condition frequent enough to make operative interference imperative in *all* depressed fractures, whether simple or compound.

Although the present outlook seems discouraging, I believe in carrying on our work in this direction until we succeed in demonstrating, one way or the other, the value of operative interference in this terrible disease.

DR. G. L. WALTON: The ground seems to have been very thoroughly covered, both from the neurological and surgical points of view. It seems to me that our experience certainly does not authorize great enthusiasm on the subject of secondary operation for traumatic epilepsy, and yet I agree with Dr. Richardson that in such a serious and often hopeless disease even a very small chance is enough to warrant us in attempting an operation wherever we think there is organic local disturbance going on either in the way of depression, cicatrical thickening, or other remains of trauma. I quite agree, however, with Drs. Knapp and Post that we not infrequently find convulsions commencing locally where no organic local irritation exists in the spot naturally suspected. I have seen a case in which convulsions starting accurately in the hand centre were shown by the post-mortem examination to have arisen from an abscess in the temporal lobe; in another case, where epileptic seizures of considerable standing started in the same way, perfect recovery ensued, which would hardly have been probable with an organic source of irritation.

With regard to the head and eyes turning to the opposite side, this seems to be a symptom which is started on very slight provocation, and would least of all lead me to suspect local irritation. I recall a patient who was under my care at one time with headache, loss of vision, and epileptiform attacks. She had one of these attacks in my office, in which the head and eyes turned at the onset violently to one side. The patient seemed rather stupid, indifferent, moved about in rather an automatic manner. I thought the chances were in favor of new growth, and treated her at first with large doses of iodide, and contemplated advising operation if she did not recover, but at the same time recognized the possibility of suppression of menses as cause of the trouble, this symptom having existed for nine months. In point of fact the whole trouble disappeared after re-establishment of the menstrual flow, she became perfectly bright, and was totally unconscious of having been to my office at all. The whole disturbance was therefore reflex, functional.

I remember another case where the principal symptom of tumor was epileptiform attacks in which the head and eyes were turned to the opposite side, together with optic neuritis. The patient refused operation. The tumor was found on post-mortem examination to extend through the motor area of the hand, arm and face, the tip of it only reaching the middle frontal lobe, the posterior part of which is supposed to be, and probably is, the centre of that motion.

It certainly seems as if the habit of epilepsy once set up by traumatic disturbance — whether there be,

as Dr. Putnam suggests, a diffuse sclerosis, or whether there is a process starting from local irritation spreading — whatever may be the cause, the habit once set up, secondary operation offers very little hope; still I should advise operation, as I did in one case of Dr. Richardson's where the convulsions did not come on for about eight years after the injury. Dr. Richardson found a sharp edge of bone pressing in the dura mater. The convulsions disappeared for a time after operation, but recurred in all their severity and frequency; still I should again advise operation in a similar case.

Regarding the consideration of a primary operation with the view of avoiding epilepsy, I think if the case just mentioned had been operated upon immediately after the accident, the epilepsy would probably have been averted, because I cannot believe there was in that case a diffuse sclerosis of the brain or any general injury of the brain. It seems rather that the attacks persisted because the habit had been established to such a degree it could not be averted by removing the original source of irritation.

I am a little sceptical about this diffuse sclerosis playing a very important part, otherwise why should we not more frequently see epilepsy set up by general blows, and falls on the head, unaccompanied by fracture?

In regard to the primary operation, I should not agree with Dr. Agnew that every case of fracture should be operated on, and I am not sure I should with Dr. Warren that every case with depression should be operated on. Of course, in every case of compound fracture I should advise operation, and in every case of punctured wound, and in every case where there is marked depression or depression with very great angle, even if the skin is not broken, or in every case even with moderate depression where there are marked cerebral symptoms.

With regard to decalcified bone I have, perhaps, no right to speak, not having any surgical experience excepting through observation, but I quite agree with Dr. Warren regarding the harmlessness of leaving the opening free, and I see nothing to be gained by inserting decalcified bone, only to be absorbed, and meanwhile, perhaps, to act as a source of irritation.

The case upon whom Dr. Homans operated by my advice last year for hemorrhage produced by contrecoup, experiences no inconvenience whatever from the large cavity which was necessary to the removal of the clot.

DR. W. N. BULLARD: I believe the most important point as to the cure of epilepsy is that the operation should be as early as possible. There is no question about the existence of an epileptic habit. Any one who has any experience of epilepsy knows this. A patient after one attack of epilepsy is much more liable to have another; and after he has had two, the attacks are liable to come with more and more frequency. For some reason the different centres become more irritable by each attack. For this reason I think it is advisable that operation should be performed for epilepsy at the earliest possible period. Of course, in those cases where operations are performed before epilepsy occurs, we have at present no statistics that would enable us to determine their value, because we have no statistics at present to determine how frequently epilepsy occurs after different forms of head injury.

That certain severe injuries, such as compound depressed fracture, should be trephined, I think there can be very little doubt. That every fracture should be trephined where there are no symptoms of local irritation is much more doubtful, and I should think that it was hardly wise to trephine in cases of simple fracture, or in cases where it seemed probable that only the outer table was injured unless with some very definite cause.

Of the traumatic cases of epilepsy which I have seen, a very large proportion have been in persons in whom the injury had existed some years, and I am inclined to think for that reason that in many cases the epilepsy comes on much later than is generally supposed; that is, some exciting cause, perhaps a very slight fall, not injuring the head, or some mental excitement, or some other cause acts at a much later period to produce an epilepsy. Of course, this is simply a matter of theory, not at present susceptible of proof; but the fact that so many cases come late would seem to be in support of it.

In regard to the treatment of epileptic cases the one important thing, in my opinion, is the use of the bromide after the operation. At least two of my cases which have been trephined have had epileptic attacks come on within five days after the operation, apparently simply from the fact that the bromide had been dropped. In one case it had been entirely omitted from the day of the operation. In the second case the bromide was given, but had been omitted two days previous to the attack. After the attack it was resumed, and for three months afterwards there was only one slight attack, which occurred again after omission of the bromide, showing that the bromide evidently had considerable influence.

As to the question of the occurrence of diffuse lesions with localized symptoms of epilepsy, I think there can be no doubt. I have seen several cases in which I have every reason to believe the lesion was diffuse, and yet localized epilepsy occurred.

As to the thickening of the dura after trephining, I have seen it much thickened, and after removing the thickened dura the patient was much better for a time.

I cannot agree with those who think that atrophy of the brain in children is always diffuse. It seems to me there are many cases in which it is not diffuse, but distinctly localized, and many such cases have been published. There are many cases in which the atrophy is diffuse.

As to the replacement of buttons after trephining, I think, as a rule, it is better to leave the button out. In one of my cases it was replaced, and the autopsy sometime later showed that it was perfectly solid, and the lower surface and edges smooth, so that there was no objection on the ground of any roughened edges to replacing it, and it completely filled the trephine hole.

DR. J. A. JEFFRIES: This whole question is one that must be settled by experience. We have started to do operations. They will be continued until the results are determined. So far, they do not seem satisfactory. I have seen a good many cases of traumatic epilepsy, but I have never been able to advise an operation yet. It seems to me we leave about the condition we operate to prevent in the shape of adhesions, irregularities, especially if we put back the button. If the operation effects a cure, it would almost seem that the scars are not the cause of the epilepsy.

DR. R. H. FITZ: recalled the recent discussion of this subject in Washington, in which ground had been taken

similar to that presented by the readers and speakers this evening.

It seemed to him that sufficient evidence had been accumulated in different parts of the world to warrant the opinion that the operation of trephining for traumatic epilepsy was no longer justifiable (admirable is, perhaps, a preferable term). It is almost universally agreed that no permanent benefit follows, and, as a rule, but little immediate relief.

It is not even certain that the latter is a result of the trephining. In Washington, Dr. H. C. Wood had stated his knowledge of the production of temporary relief from mock and trivial operations, and urged that these should first be tried before so serious an operation as trephining should be undertaken.

Great weight should be attached to the view expressed by Drs. Knapp and Putnam as to the probable, general and remote lesions of the nervous system in traumatic epilepsy. The discovery of thickened membranes, adhesions and cystic edema at the seat of an operation is no satisfactory evidence of the local origin of the disease, much less of the need of the operation. He knew that sufficient discrimination at this time was not always exercised between what was abnormal and what was pathological. A sclerosis of the diploë, an adherent or thickened dura, bone-plates in this membrane, vascular threads between the dura and pia, thickening, opacity and edema of the latter were of such frequent occurrence in the absence of epileptic symptoms that he could attach little or no etiological importance to their presence in epileptics. Even the concurrence of a depression in the outer table at a seat of injury and epilepsy was no evidence that a subjacent intracranial lesion was to be found. A fact well illustrated by Dr. Post's specimen.

Recognizing, like his surgical colleagues, that traumatic epilepsy was almost hopeless, he could not agree with them that trephining should, therefore, be advised, even in cases of depression. Certainly not while mock or trivial operations may be considered as capable of giving equally satisfactory therapeutic results, and the graver operation is so rarely followed by any considerable or prolonged benefit.

DR. P. C. KNAPP: Dr. Bullard has just told me that he saw the first patient whose case I reported, after she left the hospital, and that she still had a continuance of the fits.

Dr. Putnam speaks about the cases treated on the preventive method. I think that the number of cases, where trephining has been done with the aim of preventing epilepsy and not with the aim of relieving some cerebral symptoms present at the time, are as yet extremely few. The suggestion of trephining, for instance, in simple linear fracture, was made only a year ago by Mr. Horsley, and there are very few cases, if any, that have been operated on simply on that basis. Of course, when you get a depressed fracture or compound fracture with cerebral symptoms it is not preventive trephining.

With regard to the adhesions that may sometimes follow, I noted them not long ago in making an autopsy after trephining. It was a case of brain tumor where Dr. Bradford trephined for the relief of pressure, and the adhesions of the membranes about the trephine opening were very great.

The after-treatment by bromide was adopted in both of my cases without any result.

In regard, furthermore, to diffuse lesions, there is

one affection where certainly there are general diffuse lesions and where partial epilepsy is very common, namely, general paralysis, which has hardly been mentioned to-night.

Dr. Walton has stated that secondary operation is practically useless, and Dr. Fitz goes so far as to consider it unjustifiable. I think Dr. Fitz's position is hardly tenable, for it is an undoubted fact, and there are a good many cases now on record where after such operation we get distinct relief from symptoms for two or three years, or longer. Now, considering the very slight risk from trephining, certainly if we can give the patient a prospect of a few months' relief, as in the case reported by Dr. Beach, or of the general improvement in that girl's condition, even with the recurrence of the fits, certainly the operation is perfectly justifiable. I saw a few weeks ago one of the early cases of excision of the cortex for Jacksonian epilepsy, a case reported three years ago at Washington by Dr. Lloyd, where for a number of months the man was entirely free from convulsions. As Horsley said, three years ago, in that time the brain may so far recover itself that it may come out from the state of partial dementia, due to the convulsions, and get into a much more healthy state. Even in the cases that are a failure, strictly speaking, if we can reduce the number and severity of the convulsions, the operation is certainly justifiable.

In the report of his operation, I remember Dr. Beach made a suggestion of preventing possible adhesions between the brain and the membrane, by covering with gold foil. I do not know whether that has ever been carried out. That, certainly, would not be particularly irritating, and would not be absorbed.

DR. J. J. PUTNAM: I think we want more facts rather than opinions in the matter. Dr. Walton thinks Dr. Richardson's case if operated on earlier, would have prevented attacks, but I don't see any ground for saying so. The symptoms were not especially localized with relation to the seat of the injury, I think. It seems to me that would be rather one of the cases I had in mind when I said that the epilepsy might be due to distant or to general and diffuse lesions. I want to say a few words about that. In speaking of diffuse lesions, I said that they were often found later in epileptic brains, although I admit what Dr. Bullard said, namely, that in the case of children the cerebral sclerosis may be more or less localized, as in so-called tuberous sclerosis. What I meant to say was, that the lesion that caused the epilepsy need not be necessarily directly beneath the injured bone. It is very easy to say that the irritation sets up a discharge at a certain point, and that this discharge then spreads out. That this is possible there is no doubt, but we do not really know what may go on before a discharge of a certain centre occurs. That particular discharge may be only the expression or outcome of morbid processes taking place elsewhere. Lesions which contribute to make the whole brain unstable may indirectly cause the epileptic outbreaks, either independently of the special local lesion or in conjunction with it. I understood Dr. Walton to say really the same thing I did in speaking of the cases where epilepsy began with certain symptoms, and yet where no lesion was found at the parts of the brain corresponding to those symptoms.

Dr. Bullard spoke of contributing causes of accidental kind causing epilepsy, which would otherwise remain latent. That is a very important matter, and

that I referred to and would like to dwell on a little more in connection with the case of my patient and Dr. Beach's. The whole thing seems to have been brought back by a fall from a wagon. Up to that time she had been wholly free. Epileptic patients sometimes have their attacks brought on by bright or loud sounds. In a discussion on this subject, in connection with the statistics of the German army, the question of predisposition is dealt with as being very important.

The surgeons and all of us have spoken of the *probable* value of early operations. I do not know that any of us have given sufficient reason for deciding that they are *certainly* of value to the extent often supposed. I think that it is an opinion which we have formed, and which has a certain amount of basis, but does not, perhaps, have such basis as we could wish.

With regard to bone-plates, I have only to say that I took my statements mainly from Ziegler's Anatomy. I did see one case where the bone-plate was a possible cause of epileptic attacks. In general, I agree with what Dr. Fitz said, that they were usually not centres of irritation. That is what I specially called attention to in my paper.

The matter of general paralysis is important, and I referred to it in speaking of the diffuse processes.

As regards advisability of operating in cases of traumatic epilepsy, if we understand what it is done for and do not deceive ourselves and the patient, it is justifiable to do it for the sake of gaining a little time, just as we might operate for cancer under similar circumstances.

We have all of us seen patients who would give anything for a year's release from such symptoms as epilepsy.

MYXO-SARCOMA OF THE THIGH.

DR. J. C. WARREN: I have here a large tumor of the lower part of the femur of a woman of seventy, whose thigh I amputated on Saturday.

The history of the case is briefly this, that some ten years ago I removed a myxoma from the inner condyle of the left femur, which was followed in the course of a year by recurrence of the tumor. I have seen the patient from time to time, and owing to her age and to the extensive involvement of her thigh, I advised her not to have anything done. I have not seen her for a year or two. She appeared at the hospital a week ago with an enormous tumor of the lower part of the femur, and was very anxious to have it operated upon. I was struck by her general good condition and the fact that the tumor was still localized, although it had existed so long a time and was of so large size. With the understanding that it was a very serious operation, but that we were justified in operating to relieve the great pain from which she was suffering, I operated on Saturday. The patient is still alive, and although she has suffered a good deal from shock, still she is doing well to-day.

It is a large myxo-sarcoma of the soft parts or parts involving the periosteum. It does not involve the knee-joint. The patient was able to walk about.

I think I advised her for the best. She has had several years of comparative health so that she could take care of herself and get about. Now that she is completely disabled and suffering and nobody to look after her, it seemed advisable to interfere.⁴

⁴ Three weeks later the patient was doing well and the wound had healed except at the point of insertion of drainage-gauze.

NEW YORK NEUROLOGICAL SOCIETY.

MEETING of December 1, 1891, the President, Dr. L. C. GRAY in the chair.

DR. CHARLES A. POWERS read a paper with this title:

RESECTION OF POSTERIOR BRANCHES OF UPPER THREE CERVICAL NERVES FOR SPASMODIC TORTICOLLIS, WITH REPORT OF CASE.

In February of the present year, the patient, a man thirty-seven years of age, was sent to the speaker for an opinion regarding a spasmodic affection of the neck from which he was suffering. There was no history of syphilis or other constitutional disease. He had been from boyhood exceedingly nervous and restless, starting violently when suddenly surprised, trembling at the slightest injury or fear of danger. His father had always manifested the same nervous conditions in a marked degree. The patient had rather a senile look, stooping and throwing the head well forward. When left to itself the head was spasmodically rotated to the right to its fullest extent. The patient could carry it back by pressing the chin over with the hand, but when the restraining force was removed it was instantly jerked back to its rotated condition. These spasms were constant during the day, and much worse when the patient was fatigued, irritated, surprised or among strangers. The right hand was constantly upon the chin, and the patient was unable to use it in work or even at table. The right shoulder was not elevated, there was no spasm of the muscles of the left side and the right trapezius, sternomastoid and scalenus anticus seemed free from implication. The patient's neck was large, thick and short; it seemed somewhat fuller on the right side, posteriorly, than on the left. The spasmodic movement seemed to be a rotation of the occiput upon the atlas; when it took place an increased fulness could be felt in the region just below the occiput and covered by the trapezius, although no contraction could be felt in that muscle. After very careful examination the affection was considered to be confined to the posterior rotators, and division or resection of the nerves supplying them was recommended.

The speaker, after familiarizing himself with the anatomy of the parts, by dissection on the cadaver, proceeded to operate. The occipital region was shaved and the parts prepared in the usual way. The anesthetic was given, and the patient placed flatly upon his abdomen, the head projecting over the end of the table, and so held that the external occipital protuberance was in a straight line with the vertebral spinous processes. A three-inch transverse incision was made at the back of the neck, beginning at the median line one and one-quarter inches below the external occipital protuberance and running forward. This was sufficiently enlarged until it measured four and a quarter inches in length. After some difficulty the occipitalis major nerve was found at the upper part of the complexus outside of the intra-muscular aponeurosis of this muscle. The complexus was divided and the nerve followed back to the posterior branch of the second cervical. The inferior oblique muscle was then found, passing from the tip of the transverse process of the atlas to the spinous process of the axis. The nerve was followed back to its exit from the spinal canal. Following down beneath the complexus the external branch of the posterior division of the third cervical nerve was found. This was traced back to

the bifurcation of the main trunk. One had at command, then, the nerve-supply to the inferior oblique, the rectus capitis posterior major and the splenius, the three posterior rotators, the first being supplied by the first and second cervical, the rectus by the suboccipital from the first cervical, and the splenius by the second and third cervical. Each nerve was followed well back to the spine, and from one-half to three-quarters of an inch excised from each of the three. Buried muscular sutures were inserted, a drainage-tube laid to the bottom of the wound, and the skin sown up. A large antiseptic dressing was applied, and the head fixed in moderate extension by plaster.

On coming out of the anesthetic the patient had no spasm of the neck; the head was in the median line, and remained there until the final removal of the dressings. The wound healed per primam throughout. The tube was removed on the fifth day, and all dressings were taken off at the end of ten days. At that time there were a few slight spasms, but they did not persist. Directions were given regarding massage and the like, but these were disregarded, and the head gradually assumed a position of contraction, with the face drawn to the right. In spite of the patient's present contracted wry-neck he expressed himself as feeling that his condition was vastly better than it was before the operation.

Appropriate after-treatment, by confinement of the head, massage, etc., should receive careful attention. The speaker could but think that if such measures had been conscientiously carried out in the present case, deformity would have been much less.

DR. R. W. AMIDON thought Dr. Powers had been too modest, in that he had not called attention to the marked improvement in the patient's right arm. Before the operation this had been practically powerless, while now its functions were restored. The position of the head was now similar to that before the operation, but the spasm was now tonic instead of clonic, and therefore much more endurable. There was now no elevation of the chin which was conclusive proof that none of the muscles originating or inserted in the occipital bone were now implicated. The elevation of the right shoulder was now much more marked, and there was no doubt that the levator anguli scapulae entered largely into the production of the deformity.

DR. C. L. DANA thought the muscles of the right side, which were cut, had possibly entered into the production of spasm, but that the nerve force was now distributed through fewer channels, and perhaps this was the reason that the spasm was now tonic. The question was, at any rate, of extreme interest, because heretofore there had been much scepticism as to the value of operation for wry-neck. He thought that the experience of American observers was that operation on the spinal accessory had been uniformly fruitless, but the relief obtained, where the upper cervical nerves were involved, had given a more favorable showing. With better technique perhaps more favorable results would come in the case of the spinal accessory. He did not doubt but that the condition under consideration was the result of a central nervous lesion. Why surgical treatment should cure he did not know unless it was the result of the operation, *per se*.

DR. M. A. STARR had seen these cases treated by division of the spinal accessory. No improvement had followed. He had therefore hesitated to recom-

mend such procedure. He thought it had yet to be demonstrated that the condition was one of cerebral origin, as there was nothing analogous to wry-neck in the form of cerebral spasm of any other muscle. A patient had come to him last February with an extremely pronounced case of wry-neck. This patient had noticed that pressure on the right side of the occiput, high up, would relieve the spasm. An apparatus was accordingly constructed which, being constantly worn, enabled him at the onset of the spasm to bring the necessary pressure to the required spot by means of a system of levers worked by his arm. The speaker had that day seen the patient, and had found him apparently perfectly cured and able to leave off the apparatus.

DR. W. M. LESZINSKY thought that there was a lack of such pathological knowledge of the disease as would indicate that there existed a central lesion. It was remarkable that so few microscopical examinations had been so far made of nerves which had been resected. In the present case they had not been offered any explanation as to the cause of the arm symptom, and whether it was supposed to have borne any relation to the spasm in the neck. He had been interested in a few cases of spasmodic wry-neck, and felt confident that the hypodermic injection of atropine had helped them. He had reported such a case in which the spinal accessory was implicated, and he had felt that the benefit done was the result of the atropine. He thought that this measure should be energetically tried as part of a treatment by drugs before surgery was resorted to.

DR. J. M. MORTON cited the history of a patient who had come to him with a well-marked case of spasmodic wry-neck of long standing. Every effort had been made therapeutically. He had tried suspension. The seances had numbered about five, each lasting about five or six minutes, the patient's toes being just free of or barely touching the floor. Improvement had been prompt and had continued to a cure which had been maintained up to the last report.

THE PRESIDENT had never seen any good results from operative work in these cases. While out of a large number operated upon for him by different surgeons, temporary improvement had taken place in some, relapse had ultimately occurred. He had obtained more satisfactory results by deep injections of atropine than from any other form of treatment, though he had found the internal administration of belladonna effective. As to the permanency of the atropine benefit he could not speak, the patient having passed from observation. Temporary results were worthless for deduction and relapses were probable at any time.

ALLEGED CEREBRAL TUMOR.

DR. LESZINSKY showed a patient whom he had presented to the Society three years ago; at that time the diagnosis was made of cerebral tumor. The symptoms had then been frontal headache, vomiting and double optic neuritis. Now this man was in perfect health, and since treatment had never lost a day's work from illness. There was atrophy in both optic nerves. Vision was in one eye, $\frac{1}{2}$; in the other, $\frac{1}{2}$. There was no disturbance in the color field. The treatment during the acute stage had been by large doses of iodide of potassium with leaches and cathartics when the inflammation was excessive.

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THE BACILLUS COLI COMMUNIS.

IN a presidential address before the Medical and Chirurgical Faculty of Maryland,¹ on November 17th, DR. W. H. Welch gave an outline of his recent study of this bacillus. The differences between the bacillus coli communis and the typhoid bacillus are briefly as follows:

The typhoid bacillus is actively motile, the colon bacillus only feebly motile; the typhoid bacillus never coagulates milk, the colon bacillus coagulates it in two to seven days; the typhoid bacillus does not cause fermentation of lactose, or if at all, only in very feeble degree, while the colon bacillus actively ferments lactose. There are also differences in the appearances of the growth of the two bacilli on gelatin, agar and potato, but these are less precise and constant than the points mentioned.

The author's investigations have proved that lesions of the mucous membrane of the intestine open the way for the invasion of the colon bacillus into the blood and lymphatic vessels, and thence into various organs and parts of the body. They were found with especial frequency in the lungs and kidneys, but often also in the liver, mesenteric glands, and spleen. In a number of cases colon bacilli were demonstrated by culture methods in various organs of the body without any noteworthy lesions of the organs containing them or any lesion that could reasonably be referred to their presence. There is, therefore, no evidence that in these cases the bacilli do any harm, although it cannot be positively stated that their presence is innocuous. It is well known that human blood-serum outside of the body exerts a powerful germicidal influence upon the colon bacillus.

The author has suspected that the colon bacillus may be the cause of lobular pneumonia, as in several cases this organism has been found in large number and in pure culture in congested, edematous, and inflamed areas in the lungs. It has also been frequently associated with fatty degeneration of the kidneys, but neither in this nor in the pulmonary affection is there

¹ Medical News, December 12, 1891.

any conclusive evidence that the presence of the bacilli has done the harm.

In cases of peritonitis due to perforation of the intestine the colon bacillus is usually found, but not always, in large number in the exudate, sometimes in pure culture. It is a mistake, however, to say, as Malvoz has recently done, that all cases of peritonitis due to intestinal lesion are referable to the colon bacillus. Often enough in this class of cases the staphylococcus pyogenes aureus or the streptococcus pyogenes is present—it may be predominantly so—in the peritoneum.

Typhoid ulceration of the intestine opens the way for the invasion of the colon bacillus, which may be found in different organs, mixed with the typhoid bacillus. On account of the resemblance between these two species of bacilli a mistake has probably often been made in identifying the colon with the typhoid bacillus. The preservation of all its properties in these cases shows that the colon bacillus is not changed into the typhoid bacillus when it invades the organs in typhoid fever.

Only in two cases has the author found the colon bacillus in organs outside of the intestine without any demonstrated lesion of the alimentary canal. Although careful search was made, it is not improbable that some lesion was present.



REPORT OF THE SURGEON-GENERAL OF THE ARMY FOR THE YEAR ENDING JUNE 30, 1891.

THE army is coming nearer to our daily lives in the effort of the General Government to bring the regular army and the militia into closer relationship. A community of interest between the citizen soldier and the regular is more and more apparent. There has always been a community of interest between the civilian physician and his brother in the army. Educated in the same schools and trained in the same hospitals, the fact that one wears a uniform while on duty does not separate them any more than the same distance would do were they both civilians.

The variety of hygienic and scientific problems that the military surgeon is engaged upon at the present time is as great as that which interests his military brother of the line or his medical brother in civil life, and the Surgeon-General's Report gives some idea of the multifarious duties and almost universal knowledge required of the army surgeon.

The closer relationship which is being fostered between the army and the State Militia is well illustrated in its medical aspects. During the year included in the report, medical officers accompanied detachments of United States troops which were encamped with the militia of Pennsylvania, Iowa and Michigan. The extracts from their reports are extremely instructive as army surgeons prove keen critics of the shortcomings of their militia brethren, while very ready to recognize merit. It is evident that the vicious custom

of allowing colonels to appoint their own surgeons without examination is still preserved in some States. This custom was the source of great evil in the early days of the Rebellion, and ought not to be tolerated in any force which is liable to be called upon for active service. The regular medical officers used their opportunities to impress upon the medical officers of the National Guard, with whom they were brought in contact, the importance of their position and the fact that their duties have a much wider range than mere prescribing for such individual disorders as may by chance present themselves. The work of the hospital corps and company bearers was demonstrated. In general, it may be said that the presence of an army surgeon at a State encampment may evidently be a powerful stimulant, not merely to the medical force present, but more or less directly to the entire militia force of the State.

Some of the most interesting material in the report refers to the hospital corps, which had an opportunity to demonstrate its value in active service in the Sioux Campaign. Of it the Surgeon-General writes: "On the battlefield at the action on Wounded Knee Creek two of its members rescued a wounded officer from extreme peril under circumstances which fully entitled them to the certificate of merit which they received as their reward, while the services of the remainder rendered were so orderly and well regulated that not only our own wounded men, but wounded Indians were, with great promptness and dispatch, removed and cared for in the field hospitals which were extemporized for their benefit."

These wounded Indians, by the way, were not exactly comfortable patients. The simplest handling was met at first with suspicion and resistance. Their wounds were mostly severe and all capital operations were refused, notwithstanding explanations by missionaries, interpreters and friends. In cases of extensive injuries to the large bones or joints, septic fever came sooner or later and finally death.

The many references to the hospital corps by different officers under different headings show the great interest felt in this organization and the enthusiastic work which is steadily applied to it. To bring it nearer perfection, companies of instruction are in process of organization at three different forts. Each company is to be fully instructed in first aid to the wounded, management of field hospitals, cookery and such other matters as are necessary to secure the highest state of efficiency for field service.

Col. Joseph R. Smith, medical director of the department of Arizona, suggests that drunkards should be at once dishonorably discharged from the hospital corps and the attempt to discipline them abandoned. This suggestion, which will meet the hearty approval of hospital executive officers everywhere, is in accord with the system of summarily discharging men found, on trial, to be worthless or incorrigible; a system recently adopted in the army and which has proved of great benefit to the service.

Another scheme to prevent the enlistment of men of bad character who have previously deserted or been discharged, is worthy of much greater space than is devoted to it in the report. This is the record on cards of the personal markings of every recruit, that is, the congenital marks, scars, tatooings and other peculiarities. This system differs from the Bertillon system of identifying criminals in that no measurements are used, the record being confined to the surface markings, which are recorded on uniform charts furnished for the purpose. These charts or cards are filed in Washington, where they are kept for consultation. Although this system of records was only begun in April, 1889, thirty-four recruits have since then been recognized as deserters, twenty-six as ex-convicts and sixteen as frauds of a minor grade. It is expected that in process of time this system will be so perfect that it will be impossible for so-called "repeaters" to escape detection.

The "repeater" of to-day was the "bounty-jumper" of the war; and this elaborate system of identification recalls the act of a Boston physician, who, while acting in the capacity of an examiner of recruits, marked one man whom he recognized, with a D with nitrate of silver, in order to attract the attention of any other examiner, and prevent further fraud on the part of the recruit. This act of patriotic intention was the basis of a suit in which the physician was charged with assault or some similar infringement of the personal rights of the bounty-jumper whose trade was temporarily spoiled by the deserter's mark; and another Boston physician, while on the stand as a witness for the defence, boldly marked his bared forearm with silver nitrate to demonstrate to the jury the slight character of the offence.

It is perhaps an open question whether any system of identification would be adequate to the prevention of fraud when recruiting was going on as rapidly as during the Rebellion. Even now the proper indexing of this card-catalogue of humanity must be quite a problem, though no difficulty is mentioned in the report.

There are many other matters of interest in the report; but enough has been said to show that an army surgeon has many interests outside of the study of individual cases of disease and injury.

THE ASSOCIATION OF MILITARY SURGEONS OF THE NATIONAL GUARD.

A PRELIMINARY notice of the second annual meeting of the Association of Military Surgeons of the National Guard of the United States has already been sent out. The meeting is to take place in St. Louis on April 19, 20 and 21, 1892. The object of this Association, as given in the preamble to its constitution, is to promote and better the science of military surgery, and at the forthcoming meeting "all matters pertaining to the health, usefulness and welfare of the civilian soldiers will receive attention." The after-

noon of one day will be set apart for an object-lesson from the "Manual of Drill," by hospital corps of the United States Army, detailed for this purpose. The announcement speaks of this drill as "a very important, as well as instructive, feature of this session." It is but another means of affiliating the medical corps of the army and of the National Guard.

If this Association can accomplish the objects for which it is established, it deserves the support, not of militia surgeons alone, but of the profession at large. The army medical standard, as well as that of other government establishments, has always been particularly high, and its influence has been to raise the grade of professional attainments in a country where there has been an unfortunate tendency to lower the standard. On the other hand, in the militia in general the standard has been low. This is a sweeping statement which has numerous brilliant exceptions. If this Association will change all this, and raise the militia standard until a commission is in all the States an evidence of professional attainments, it will do indirectly for the benefit of the profession at large nearly as much as it accomplishes for the militia.

MEDICAL NOTES.

A NEW HOSPITAL IN CALIFORNIA.—By the will of the late Mrs. Catherine Garcelon, of Oakland, Cal., the sum of about \$600,000 is bequeathed to found a hospital in Oakland. Bowdoin College is to receive about \$400,000.

INFLUENZA.—During the past week, the epidemic of influenza has shown no signs of abating, either in this country or in Europe. Beside the countries of northern Europe, the northern part of Italy is suffering severely, especially the cities of Milan and Genoa. It is announced by cable from Berlin that the method of propagation of the specific organism of the disease has been discovered.

THE CONTAGIOUSNESS OF INFLUENZA.—It is reported by cable that the health authorities of Dover, in England, have accepted the contagiousness of influenza as a fact, and have arrested and fined a number of persons who are suffering from the disease, for frequenting public places while suffering from a contagious disease, in violation of law.

RELIEF FOR RUSSIA.—The Governor of Massachusetts has issued an official appeal for contributions in aid of the sufferers from the famine in Russia, in which he says, that official statements show that there is a deficiency of seventy-five million bushels in the grain needed up to the time of the next harvest. Unless help comes speedily, extreme suffering and many deaths by starvation must ensue. The Federal Government and three States have already issued appeals. The Governor has appointed as a committee to take charge of the contributions, Rt. Rev. Phillips Brooks, Rev. Edward Everett Hale, O. W. Peabody, William Lloyd Garrison and Josiah Quincy.

CHOLERA AMONG SHARKS.—A report comes from Bombay that an epidemic of cholera has broken out among shoals of sharks that infest the Indian Ocean. The bodies of seventeen British seamen, who had died of cholera in the harbor of Bombay, on the hospital ship, were sewn up in canvas, taken out to sea, and "buried." It is believed that a shoal of sharks feasted upon the remains of these victims of cholera, and thus became infected.

NEW ENGLAND.

THE MORTALITY OF BOSTON was higher last week than it has been since January, 1890. The number of deaths was 313, making a death-rate of 36 per thousand. Among the causes of death were pneumonia 85, consumption 36, bronchitis 30. Thirty-three were stated as due to influenza, of which 24 were complicated with some other disease. The number of persons who were over sixty years of age was 109.

BOSTON CITY HOSPITAL.—The following order was recently passed by the Boston Common Council: "That the Board of Trustees of the City Hospital, through His Honor the Mayor, be requested to consider the advisability of establishing a branch of the City Hospital in Brighton District and also one in East Boston or Charlestown, and report to the next City Council the result of their deliberation."

THE MASSACHUSETTS SCHOOL FOR IDIOTIC AND FEEBLE-MINDED YOUTH, which for over forty years has been situated in South Boston, has been lately transferred to its very convenient new buildings in Waltham, near the Clematis Brook station of the Fitchburg Railroad. The school is the oldest of its kind in America. It was opened in 1848 with three private pupils and ten State charges. During the past year it cared for about three hundred, a large number of whom were beneficiaries of the State.

NEW YORK.

A NEW SITE FOR COLUMBIA COLLEGE.—As Columbia College is considerably cramped for room in its present location, it is probable that another site will be selected for it, and a committee has been authorized by the trustees to secure from the New York Hospital a six months' option on a portion of land now occupied by the Bloomingdale Asylum, the department for the insane of the hospital, which is shortly to be removed to White Plains.

THE BOARD OF HEALTH.—The Board of Estimate and Apportionment has allowed the sum of \$435,138 for the expenses of the Board of Health during the coming year; which is about \$15,000 more than was allowed last year. Among the items is \$30,000 for enlarging the Reception Hospital at the foot of East 16th Street. The Commissioners of Charities and Correction asked for an appropriation of \$2,877,245, but the amount allowed was \$2,171,383.

THE PRESBYTERIAN HOSPITAL.—The new buildings of the Presbyterian Hospital were formally opened with a reception to invited guests, on the 19th

of December. They are eight in number, some of them standing on the site of the pavilions destroyed by fire in December, 1889, and are built of brick, trimmed with brown-stone, terra-cotta, and blue-stone. They include a medical pavilion, two surgical pavilions, an isolated pavilion for infectious diseases, a dispensary and an operating theatre, and the entire cost has been over \$875,000. The two principal pavilions, which are five stories in height, have been built with flat roofs, in order to provide a roof-garden and solarium for the patients.

Miscellany.

THE NON-CONTAGIOUSNESS OF LEPROSY.

At a meeting of the New York County Medical Association held December 21st, Dr. L. Duncan Bulkley read a paper on "The Non-Contagiousness of Leprosy," in which he gave the following as his conclusions:

- (1) Leprosy is not in any proper sense of the word a contagious disease.
- (2) There is not the slightest warrant for public alarm concerning cases of leprosy.
- (3) It is not due to climatic or race conditions.
- (4) It originates from a bacillus.
- (5) There is reason to believe that under certain conditions it can be inoculated.
- (6) There is considerable ground for the opinion that it is frequently caused by food and especially fish.
- (7) Heredity is a possible factor in its causation.
- (8) There is far greater warrant for the seclusion and regulation of syphilis and tuberculosis than of leprosy.

NEW REGULATIONS OF THE NEW YORK COMMISSION IN LUNACY.

At a meeting of the State Commission in Lunacy held at Albany, December 5th, a number of regulations were adopted, among which are the following:

That no license will hereafter be granted to operate and maintain an institution for the care, custody or treatment of the insane, unless such institution shall be constantly in charge of a well educated resident physician, who shall possess the following qualifications: He must be a graduate of a legally incorporated medical college, and must have had at least five years' actual experience in an institution for the care and treatment of the insane. In existing institutions this order will in all future appointments be held to apply.

That hereafter the approval of the Commission in writing will be required upon the appointment of all assistant physicians in licensed institutions for the care, custody or treatment of the insane. In existing institutions this order will in all future appointments be held to apply.

That no voluntary patient shall be admitted to a licensed institution for the care, custody or treatment of the insane permitted to receive voluntary as well as committed patients, whose mind is so impaired as to render him incapable of forming a rational judgment as to the disposition of his person, or whose will is so weak as to render him incapable of resisting undue influence. (A special form of application, to be accom-

panied by the certificates of two suitable witnesses, is to be signed by all voluntary patients seeking admission to such institutions.)

OBITUARY.—BUCKMINSTER BROWN, M.D.

In the death of Dr. Buckminster Brown, this community has lost a man of more than ordinary professional achievement, who held for many years a position of well-earned distinction. To have attained to prominence in the profession of medicine, it is in itself a success, but to have succeeded in the race of life, hampered by physical infirmity which would have hindered the work of any one except a person of unusual character, is indicative of great determination, high purpose, and unusual energy of spirit.

Dr. Brown was born in Boston, July 13, 1819. With excellent educational advantages here and abroad, inheriting a place, as it were, in the profession, he enlarged his opportunities and made for himself a name which was known beyond the confines of the community in which he lived. His life and career were necessarily very much apart from the ordinary run of the bustling life of an active city, and it is chiefly to men of his specialty that the true value of his work is fully known. Supplementing his father's initial efforts, Dr. Buckminster Brown was the first to develop in America orthopedic surgery as a specialty; and by him the methods in vogue in England at that time, were carried out with a completeness, a thoroughness, a mastery of detail, a persistency of purpose, which deserved and won unusual success.

At a time when many men were diverted to more brilliant fields of surgery, Dr. Brown persistently carried out the painstaking and thorough methods needed in curing long-continued chronic affections and no case that he attempted suffered from the lack of great perseverance on the part of the attending surgeon.

In his later years his activity was limited by increasing infirmities, but he won, in what may be considered his old age, at a time when most are glad to lay down responsible effort, a triumph which adds reputation not only to his own name but to that of his city, in a cure of a case of double congenital dislocation of the hip-joint, by long and persistent treatment by traction and recumbency. This case demanded for its success not only unusual powers as a practitioner, (and these Dr. Brown possessed to a more than ordinary extent,) but also great persistency, originality of thought, and an amount of courage of conviction which is not ordinarily demanded in everyday surgery. The case is a unique one, and in all probability will remain for some time one to be quoted and admired as a model and an example of success by an unusual method of treatment of a hitherto incurable affection.

Dr. Brown's contributions to medical literature were always carefully considered. He was not a voluminous writer, and the list of his writings is not a large one; but whatever was written was most carefully and thoroughly done, and in a careful, scholarly spirit. He represented the English school of orthopedic surgery, and the excellent qualities of that school at its most active and productive period. Although he did not care to consider himself a specialist, yet his work was almost entirely special, and his career emphasizes the benefit of specialization and special work. In fact, he was one of the first of specialists in point of time; but his attention was also called to work outside of his specialty; and a case which illustrates this is the cure of an iliac aneurism by pressure which was used while the patient walked about. The result was demonstrated by an autopsy which occurred several years later, and was reported by Dr. Beach of this city.¹ The case is one that deserves especial mention in the history of the treatment of aneurism.

Besides his remarkable case of congenital dislocation, Dr. Brown's most brilliant success was in the treatment of club-foot, which, considering the methods which were then in vogue, is a monument to thoroughness, persistency and faithfulness.

Valuable articles were also written by Dr. Brown, on the correction of the deformity and contraction of the hip-joint and extension in the treatment of diseased vertebrae.² Whatever Dr. Brown wrote is of value, either as evidence of current surgical practice of the time or as of permanent interest in the annals of orthopedic surgery, a specialty he did so much to advance.

THERAPEUTIC NOTES.

THE TREATMENT OF PNEUMONIA.³—The *Séminaire Médical* summarizes the modes of treatment of several physicians of Paris. Professor Bouchard considers acute pneumonia as a local malady, caused by a micro-organism whose seat is in the pulmonary tissue. As to treatment, he has not yet commenced his researches, but he hopes to be able to find a specific for the pneumococcus. Professor Cornil said that as *chef de clinique* of Bouillaud, he gave two bleedings at the beginning of the malady, but the result was neither less or more successful than now. He gave as his own treatment scarifications followed by a blister and the administration of an alcoholic potion, with Dover's powder. M. Chauvillard was convinced that no remedy has been discovered which would neutralize the toxic of the pneumococcus nor abridge the vitality of the pathogenic agent. M. Dujardin thought that the state of the heart in pneumonia was the chief consideration, consequently he treats the disease, especially in alcoholic subjects, with injections of *cafféine*. He prefers the preparations of kola, or that of coffee or tea to those of alcohol. To calm the nervous manifestations he prescribes chloral, but he never gives opium. As to blisters, he employs them only when the fever has abated. Professor Peter treats the robust by scarifications *loci dolentis*, and the weak and aged by alcoholic stimulants. M. Bucquoy considered sulphate of quinine as very useful in most cases, and prescribed alcohol in pneumonia of the summit and in the aged. M. Muselier follows the same method, but rejects completely blisters. Professor Jacoud treats specially symptoms. Dr. Huchard recommends injections of caffeine combined with ether, from four to eight injections daily, representing eight grains of caffeine, as he considers the danger to be at the heart.

¹ Medical Press, November 25th.

² Boston Medical and Surgical Journal, 1881, and July 1884.

METEOROLOGICAL RECORD.

For the week ending December 19, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-meter		Thermometer		Relative humidity		Direction of wind		Velocity of wind.		Wet bulb. ° F.	Rainfall in inches
	Daily mean.	Daily mean.	Maximum.	Minimum.	8 A.M.	8 P.M.	8 A.M.	8 P.M.	8 A.M.	8 P.M.		
S. 13	30.01	46	55	37	50	51	54	S.W.	W.	15	10	C. C.
M. 14	30.12	53	59	49	69	41	55	W.	N.	9	13	O. O.
T. 15	29.59	38	39	29	64	100	92	E.	E.	15	6	S. R. .15
W. 16	29.42	39	45	33	56	96	76	N.W.	W.	10	18	R. R.
F. 17	29.42	23	24	12	62	47	58	W.	N.W.	20	12	C. C.
P. 18	29.42	23	24	12	62	47	58	W.	N.W.	9	10	C. C.
S. 19	29.32	34	42	25	57	64	60	W.	N.W.	9	10	C. C.
Avg.												
	29.55	34	41	26	68	47	64			13	13	

* O, cloudy; C, clear; F, fair; G, fog; H, haze; S, smoky; R, rain; T, threatening; N, snow. [†] Indicates trace of rainfall. ^{avg.} Mean for week.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, DECEMBER 19, 1891.

CITIES.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York .	1,515,361	866	273	19.63	23.79	4.29	.65	7.15
Chicago .	1,069,859	520	220	17.67	17.67	1.90	6.46	4.36
Philadelphia .	1,041,261	450	180	39.33	18.67	2.22	.44	9.68
Brooklyn .	806,343	394	140	14.56	25.00	2.25	.75	9.06
St. Louis .	451,770	—	—	—	—	—	—	—
Boston .	448,477	230	62	12.47	21.21	1.72	6.38	1.72
Baltimore .	434,439	80	13.6	17.92	3.87	.86	6.50	9.00
Cincinnati .	296,908	211	33	14.19	23.85	2.35	8.53	8.53
Charleston .	241,800	100	39	16.00	15.47	2.07	5.07	11.90
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg .	240,000	94	45	30.22	2.12	3.18	2.12	24.56
Milwaukee .	240,000	50	25.83	15.35	1.23	3.69	14.76	—
Washington .	236,362	123	42	11.34	1.34	—	3.24	2.43
Nashville .	76,000	16	10.92	23.66	—	—	—	1.62
Charleston .	65,165	42	15	14.28	4.76	—	—	—
Portland .	36,425	12	2	—	—	—	—	—
Worcester .	84,625	34	9	14.70	26.46	5.88	—	—
Lowell .	77,696	21	6	19.04	0.52	—	4.76	—
Fitchburg .	74,800	21	11	5.24	1.91	—	5.00	—
Cambridge .	74,028	22	6	22.75	15.45	4.55	—	—
Lynn .	53,727	12	3	—	16.66	—	—	—
Lawrence .	44,654	36	12	8.34	22.24	2.78	—	5.56
Springfield .	44,179	19	12	15.78	26.36	5.26	5.26	—
New Bedford .	40,353	19	12	15.78	26.36	5.26	5.26	—
Salem .	39,801	10	2	—	16.00	—	—	—
Chelsea .	27,909	12	3	—	16.66	—	—	—
Haverhill .	27,412	14	2	—	—	—	—	—
Taunton .	25,445	11	5	—	9.09	—	—	—
Quincy .	24,651	11	5	—	21.82	—	—	9.11
Newton .	24,279	9	1	22.22	33.33	—	—	11.11
Malden .	23,031	11	1	56.36	9.09	—	—	18.88
Fitchburg .	22,037	5	1	—	20.00	—	—	—
Waltham .	18,707	8	1	—	12.50	—	—	—
Pittsfield .	17,281	—	—	—	—	—	—	—
Quincy .	16,227	—	1	—	—	—	—	—
Newburyport .	13,947	4	0	—	—	—	—	—
Medford .	11,079	—	—	—	—	—	—	—
Clinton .	10,424	—	—	—	—	—	—	—
Hyde Park .	10,193	—	—	—	—	—	—	—
Peabody .	10,158	0	0	—	—	—	—	—

Deaths reported 3810; under five years of age, 1266; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas, and fevers) 605, acute lung diseases 736, consumption 372, diphtheria and croup 283, scarlet fever 92, typhoid fever 71, diarrhoeal diseases 71, measles 21, whooping-cough 18, cerebro-spinal meningitis 17, erysipelas 14, malarial fever 8.

From diarrhoeal diseases Chicago 18, New York 16, Baltimore and Charleston 4 each, Philadelphia, Pittsburgh and Washington 2 each, Brooklyn, Boston, New Haven, and Lowell 2 each, Milwaukee, Lowell, Cambridge, Springfield and Newton 1 each. From measles New York 17, Brooklyn 2, Cincinnati and Pittsburgh 1 each. From whooping-cough New York 4, Philadelphia 3, Boston, Pittsburgh and Washington 2 each, Brooklyn, Baltimore, Milwaukee, Nashville and Lowell 1 each. From cerebro-spinal meningitis New York 4, Chicago and Worcester 3 each, Milwaukee 2, Philadelphia, Brooklyn, Washington, Nashville and Chelsea 1 each. From erysipelas New York and Chicago 4 each, Pittsburgh 2, Brooklyn, Boston, Milwaukee and Cambridge 1 each. From malarial fever New York and Brooklyn 3 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending December 12th, the death-rate was 19.8. Deaths reported 3,580: acute diseases of the respiratory organs (London) 348, whooping-cough 116, measles 92, fever 55, diphtheria 49, diarrhoea 48, scarlet fever 42.

The death-rates ranged from 12.4 in Norwich to 45.1 in Plymouth, Birmingham 18.8, Bradford 17.5, Hull 13.5, Leeds 20.6, Liverpool 25.0, London 18.1, Manchester 19.5, Nottingham 21.6, Sheffield 18.1.

In Edinburgh 45.4, Glasgow 26.3, Dublin 25.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 26, 1891, TO JANUARY 1, 1892.

CAPTAIN SAMUEL A. ROBINSON, assistant surgeon, U. S. A., granted leave of absence for twenty days to take effect on or about January 2, 1892.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—The annual meeting of the Society will be held on Monday, January 11, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M. Dr. C. P. Strong: "The Relief of Salpingitis by Drainage of the Uterus."

Dr. G. Haven: "Three Cases of Craniotomy," done for different reasons, during the month of September, at the Boston Lying-in Hospital. Election of officers.

G. G. SEARS, M.D., Secretary.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT, SECTION IN OBSTETRICS AND GYNECOLOGY.—A regular meeting will be held at 19 Boylston Place, on Wednesday, January 13, 1892, at 8 o'clock P. M.

There will be a discussion on "The Pathology, Diagnosis and Treatment of Pelvic Inflammations," which will be opened by Drs. Fitz, Chadwick, Davenport and Cabot.

N. B.—Members of Suffolk District who wish to receive notifications of the meetings of this Section will kindly inform the Secretary to that effect.

GEORGE HAVEN, M.D., Secretary, 92 A, PINCKNEY ST.

THE SECOND INTERNATIONAL CONGRESS ON DERMATOLOGY will be held in Vienna from September 5th to 10th, 1892. In connection with the Congress there will be an exhibition of all objects connected with the pathology and therapy of diseases of the skin.

PROF. M. KAPOSI, President.

DR. G. RIEHL, General Secretary.

RECENT DEATHS.

HENRY O. MAYO, M.D., Captain and Medical Director, United States Navy, retired, died in New York, January 1st, aged seventy-two. He was appointed assistant surgeon in 1846, surgeon in 1859, medical director in 1872, and placed on the retired list in 1873, since which year he has lived in New York.

JAMES AYER, M.D., M.M.S.S., died in Boston, December 31st, aged seventy-six. Dr. Ayer graduated from Bowdoin College in 1834, and from the Bowdoin Medical School in 1838. He came to Boston in 1846. Among the institutions in which he was specially interested were the Discharged Soldiers' Home and the Lying-in Hospital, of which he was a trustee for many years.

ALFRED RICHET, M.D., of Paris, who has been surgeon in the hospitals of Lourcine, St. Antoine, St. Louis and La Pitié, a member of the Academy of Medicine and of the Legion of Honor, died December 31st, aged seventy-five.

BOOKS AND PAMPHLETS RECEIVED.

The Columbia Daily Calendar for 1892. Pope M'F'g Co.

Eighteenth Annual Report of the Maternity Hospital, Philadelphia, 1891.

The Application of Sacral Resection to Gynecological Work. By E. M. Montgomery, M.D., Philadelphia. Reprint. 1891.

A Hint to the Literary Men of the Profession. By Charles Perry Fisher, Librarian of the College of Physicians, of Philadelphia.

Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy. Washington: Government Printing Office. 1891.

The Modern Treatment of Hip-Disease. By C. F. Stillman, M.D., late Professor of Orthopedic Surgery in the Chicago Polyclinic. Detroit: George S. Davis. 1891.

The Anatomical and Histological Dissection of the Human Ear, in the Normal and Diseased Condition. By Dr. Adam Politzer. Translated by George Stone. London: Baillière, Tindall & Cox. 1892.

Scops of Orthopedics; The Forms of Club-foot; Tenotomy. The Etiology of Club-foot; The Treatment of Club-foot; The Plaster-of-Paris Bandage. Two Lectures by H. Augustus Wilson, M.D. Reprint. 1891.

Paranoia, A Study of Some of the More Prominent Types, with Contribution of Three Cases. By William P. Spratling, M.D., First Assistant Physician, New Jersey State Asylum for Insane, etc. Reprint. 1891.

The Improvement of Evacuators for Litholapaxy and the Later Developments of the Operation. By Otis K. Newell, M.D., Surgeon to Out-patients at the Massachusetts General Hospital, Boston, Mass. Reprint. 1891.

The Hydriatic Treatment of Typhoid Fever according to Brand, Triper and Bouvier, and Vogl. By Charles Sihler, M.D., Ph.D., Professor of Histology in the Medical Department, Western Reserve University. Cleveland: C. Sihler. 1892.

Original Articles.**A BACTERIOLOGICAL EXAMINATION OF THE BOSTON MILK-SUPPLY.**BY W. T. SEDGWICK AND JOHN L. BATCHELDER, JR.,
Massachusetts Institute of Technology, Boston.

It is well known that milk, especially as it is found in large cities, is usually swarming with living bacteria. Most of these are probably harmless vegetables, nevertheless they constitute a host of organisms entirely foreign to the milk itself. The so-called "pure" milk ordinarily obtained in Boston, even when it has not been tampered with, frequently contains in a teaspoonful millions of these microscopic vegetables luxuriantly thriving in a soil most favorable for their development. Moreover, although themselves invisible, they do not fail to produce obvious effects. The souring and chemical decomposition of the milk which soon appear are due exclusively to their vital activity, and the milk which was originally sweet, and which in their absence remains forever sweet, becomes, owing to their activity, sour and chemically decomposed. In this condition it has important uses, but it is no longer "fresh" or "sweet" or "normal" milk. Under the worst conditions milk may actually be delivered to the consumer nearly or quite sour; and we have ascertained that in Boston it is regularly and systematically delivered to the great majority of consumers comparatively well advanced towards this condition.

It is with this aspect of the subject only that we shall deal in the present paper. We shall show, in the first place, that the normal milk of the cow contains no ordinary putrefactive bacteria; we shall next discover the source of the swarms of bacteria which infest ordinary city milk; we shall then briefly consider the bearing of these phenomena upon the public health, and the possibility of remedying the present conditions.

It will be observed that we are not now dealing with the specific germs of disease. It is well known that milk is an excellent food for many kinds of bacteria, and this, added to the fact that it is one of the cheapest and most trusted of food-stuffs, makes milk, when infected with pathogenic organisms, a peculiarly dangerous vehicle for the transmission of infectious diseases. Cow's milk, when once infected with the specific organisms of disease is probably a medium far more dangerous than an equal volume of infected water, since, for many bacteria, it is a much more favorable soil. With this aspect of the subject, however, we shall in this paper have nothing to do. We desire simply to show how far the milk in Boston regularly differs in bacterin from the normal; and to discover the causes of this difference. The methods employed for this more general inquiry have not been adapted, or intended, for the discovery of the exceptional cases of contamination of the milk with the specific germs of such diseases as tuberculosis or typhoid fever.

Chemical examinations, both official and unofficial, of the milk-supply of Boston have been, and continue to be, repeatedly made, but no systematic and extensive bacteriological examination has hitherto been reported. It appeared to us therefore, highly important, at least from the scientific standpoint, to inquire what information might be gained by a series of bacteriological examinations systematically conducted. To

this end, during the past two years, we have made many hundreds of examinations of Boston milk, of which the principal results are here published for the first time.¹

In order to discover the bacteriological changes which milk undergoes in its journey from the cow to the consumer we have made a series of examinations of milk as it flows from the cow; of milk as it is carried from the stable; of milk as it is found upon the tables of well-to-do country families; of milk as it arrives in Boston; of milk as it is sold from wagons, in groceries, etc.; and finally, of milk as it exists upon the tables of well-to-do city families. The main object throughout was to discover the source and significance of the bacterial swarms which infest city milk. To this end our experiments began with the cow.

I. NORMAL (UDDER) MILK.

That milk must be regarded as *normal* which is drawn from the teat of a healthy cow. In such normal, or udder, milk, we have found no trace whatever of bacteria. The same result has been obtained by some previous observers, while others have found it difficult or impossible to obtain milk from the cow free from all germs. All observers, however, agree that very few, if any, organisms are present in normal cow's milk, and that the germs sometimes observed have probably been due to defective manipulation. Without special precautions, we, also, have found it extremely difficult to draw milk from the cow's udder *entirely* germ-free, and at first we failed to get it absolutely sterile. By a special method, however, we have succeeded in drawing, with ease, from the cow's udder, absolutely sterile milk. From this fact and the similar observations of others, there need be no question that the normal milk of the cow is free from bacteria. A consideration of the mechanism and physiology of secretion will show that this, for the healthy cow, is entirely reasonable. Normal cows secrete milk; they do not secrete bacteria.

A method by which this fact can be easily established deserves description. If one seeks to draw normal milk, germ-free, by hand, and milks in the ordinary way, into a sterilized bottle, he will usually fail to obtain sterile milk. The reason appears to be that the act of milking shakes the udder and throws down from the skin of the animal a shower of dust and germs which pass into the bottle with the milk. By the use of the silver catheter or so-called "milking-tube" of veterinarians, however, this disturbance is completely avoided. The milk flows, without action of any kind on the part of the observer, in a strong and steady stream, of which a portion may be easily caught by a merely instantaneous exposure to the air.

The precise method of procedure is as follows: A clean cow is selected and the operation should be attempted only in a clean stable. Care being taken to avoid disturbance of the bedding (if any) the skin of the hind quarter and of the udder are washed. The teats are then wiped dry and milking in the ordinary fashion is begun, in order to start the secretion. A pause is then made and while the dust of the stable settles, the milk accumulates in the udder. The catheter, previously sterilized by heat, is drawn from a plugged test tube and cautiously passed through one of the teats into the udder. The milk instantly flows away from the

¹ An abstract of this paper was read by J. L. Batchelder, Jr., before the Boston Society of Medical Sciences, March 31, 1891.

resting udder, through the catheter, in a strong and continuous stream, from which a series of samples can readily be taken. Many of these, in our experiments, proved, if planted at once, perfectly sterile. Others showed a very few colonies which were plainly due to aerial contamination.

We have not sought to determine the presence or absence of tubercle bacilli in normal milk, as this was foreign to our investigation. At the same time it is clear that this method might well be applied in such an investigation. The detection of tubercle bacilli in milk has hitherto depended, not on cultures, but upon the differential staining of cover-glass preparations, and upon the infection of guinea pigs with cow's milk. These experiments have sufficed to show the presence of such bacilli in the milk, but they do not tell us whether the bacilli have come from the udder or not. The mere detection of the germs of tuberculosis in cow's milk does not prove that these have proceeded from the cow's udder. They may have come from the dried saliva or excrement of the cow, and have fallen in during the act of milking. By the method just described, however, it might perhaps be found possible to obtain more valuable results, and even to make test cultures of diseased milk.

II. PURE COUNTRY MILK.

In the previous section we have shown that healthy cows give milk which, examined by the usual methods, is absolutely free from germs. It appears, therefore, that the normal milk of the cow is milk not only undecomposed, but free from the germs of decomposition. "Pure" milk may possibly be defined as milk which has not been watered. It is sometimes so defined. But normal milk cannot be defined in this way, and in the considerations which will follow the high standard of normal milk must be kept in view. Clearly, also, the cow is not the source of the hosts of bacteria regularly observed in Boston milk. We therefore turned to the examination of milk as it is found upon the tables of well-to-do country families; that is, to the study of unquestionably "pure," country milk. Such milk is generally comparatively fresh, and is often served only a few hours after the milking. Nevertheless our results show that such milk is generally rich in bacteria, though the numbers are much smaller than in ordinary city milk. We then made the following experiment: milk was drawn from a clean and well-kept Holstein cow in an unusually decent stable. The normal milk of this cow had already been repeatedly proved to be sterile. Milk drawn by hand from this cow with great care into sterilized bottles, and planted quickly, yielded, as an average of several trials, 530 bacteria per cubic centimetre. When, however, the milkman used the ordinary milk-pail of flaring form, seated himself with more or less disturbance of the bedding, and vigorously shook the udder over the pail during the usual process of milking, we found that the numbers were very much higher, namely, an average of 30,500 per cubic centimetre, at the end of the milking. When such milk is found upon the tables of country families a few hours later, it usually shows still more bacteria, doubtless because those with which it was seeded have had time to multiply. The average of fifteen such samples from the tables of families in Jamaica Plain, Cambridge and Auburndale was 69,143 per cubic centimetre. In these cases, moreover, the conditions of

the cows and of the stables were exceptionally good, while the milkmen were much more than ordinarily clean and careful.

It follows from these results that there are two principal sources of the bacteria in milk; namely, contamination during the act of milking, and the natural multiplication of the bacteria thus introduced during the interval between milking and the consumption of the milk. The result of these investigations was to show that even under the most favorable conditions cow's milk as ordinarily drawn becomes, almost necessarily, infested with hosts of bacteria at the very outset. Under worse conditions, with unclean stables and dirty milkmen, to say nothing of half-cleaned pails and cans, it is easy to understand why milk swarms with bacteria: and, if we allow time also, the wonder is, not that it contains so many germs, but rather that it is still potable at all.

When we reflect upon the indescribably filthy condition of many cow stables; upon the fact that the cow's udders and flanks are not infrequently covered with flaking excrement; upon the quality of the men employed to do the milking, etc., etc., it becomes a simple matter to understand how this rich, animal fluid — sterile at the start, but drawn by unclean hands into half-cleaned pails, and meantime sprinkled from above by the dust of the stable, by hairs, dandruff, dirt and particles of excrement from the skin and udder of the cow vigorously shaken by the milker or brushed by his hat — becomes infested with organisms. That these multiply swiftly and enormously in the warm and rich fluid, well aerated by the act of milking, is also a natural consequence of favorable conditions.

III. BOSTON MILK.

If, now, we turn to the condition of city milk as exemplified by that delivered in Boston (and we have no reason to suppose that Boston is worse in this respect than many large cities) we find, as might be anticipated, a marked increase in the numbers of bacteria over those found in country milk. The average number of bacteria found in fifty-seven samples of Boston milk in the spring of 1890 was 2,355,500 per cubic centimetre (roughly equal to a cubic one-third inch or to one small thimbleful). These samples came from different parts of the city. Thus:

Charlestown,	8 samples averaged . . .	4,222,500 per c. e.
Jamaica Plain,	10 "	3,259,600 "
Roxbury,	17 "	1,874,200 "
South Boston,	9 "	2,778,000 "
North End,	6 "	708,100 "
Back Bay,	7 "	1,189,800 "

These samples were obtained directly from the milk wagons and planted at once. We are indebted to Dr. Charles Harrington, Milk Inspector of Boston, for much courteous assistance in procuring these wagon samples.

From groceries we obtained sixteen more samples, in which the average number of bacteria was 4,577,000 per cubic centimetre. The groceries usually have older milk than that found in the wagons, which readily accounts for the higher numbers of bacteria.

Ten samples collected from well-to-do families upon the Back Bay showed an average of 1,438,000 per cubic centimetre. The lowest number found in Boston milk supplied in the ordinary way was 30,600 per cubic centimetre. With special care, however, milk can be, and is now in a few cases, regularly delivered

in Boston with much greater freshness and purity than these figures indicate.

It will be seen at a glance that the milk-supply of Boston is very rich in bacteria. Much of the milk arrives from distant point by rail, and is therefore necessarily more or less stale. Forty-four samples of this so-called "railroad" milk from one dealer showed that the milk, even upon its arrival, contains on the average more than 500,000 bacteria per cubic centimetre. The extremes in this case were 5,664,000 and 2,200. In another set of ten samples the milk on its arrival in Boston averaged 371,000 per cubic centimetre.

Our experiments have been repeated in 1891, and the results prove that the figures for 1890 are not exceptional. There are some indications that, as might perhaps be expected, watered milk contains fewer bacteria than unadulterated milk. "Skim" milk, on the other hand, probably on account of its staleness, is sometimes very rich in organisms, though this is not always the case.

IV. INTERPRETATION OF THE RESULTS.

We have now shown that the normal milk of the cow is free from bacteria. We have also found that the milk-supply of Boston is exceedingly rich in bacteria. We have further discovered that these bacteria are principally introduced during the operation of milking in unclean stables, and that they afterwards multiply enormously in the milk, in which they effect important changes of decomposition. Two principal conditions thus co-operate to cause the extraordinary abundance of bacteria in Boston milk; namely, uncleanness and staleness. The former condition furnishes the seeds of decomposition; the latter the time for their development. Their co-operation produces a fluid widely different from normal cow's milk.

It remains to inquire what is the probable effect of this condition of the milk-supply upon the health of the community. Here we are almost completely in the dark. There can be no question that much of the milk is consumed when cooked, and even when raw without the least apparent injury and with great apparent benefit. But it is probably also true that the use of stale and partially decomposed milk charged with living bacteria, has its effects upon invalids and children, and particularly upon infants, and that these effects are not always beneficial. It is possible that one explanation of the high mortality of children under five years of age, and especially of bottle-fed children, is to be sought for in this direction.

It will not do to argue, because healthy adults drink polluted milk without obvious injury and with evident benefit, that invalids and infants may safely do the same. In order to learn the consequences of a battle, the investigator must examine not merely the survivors; he must consider also the fallen. If it be admitted that infants, children and invalids require normal cow's milk it cannot be denied that they are now rarely, if ever, fortunate enough to get it. Many parents who are fastidious to the last degree concerning their own wine or table-linen, provide for their children, cow's milk which is both stale and filthy. It is safe to say that if our soups or drinking-water were drawn from cows, in remote and obscure stables, by ordinary milkmen, and shipped, adulterated and delivered as our milk is, we should appreciate and resent the pollution. At present, however, so far as mere pollution is concerned,

it is probably true that milk is actually improved by the addition of pure water. The public inspection of milk in America is usually directed mainly to the prevention of fraud; rarely, if ever, to the question of pollution, or except in a very general way, to the protection of the public health.

"One point deserves in the future much greater attention. This is the *pollution* of milk. No food material can be so much polluted as milk. If any one will compute how much cow's excrement an infant swallows, and how much excrement an adult consumes in drinking the sewage-polluted water of the Isar, he will find that the latter is by far the better off."

Dr. Sohlet, the author of the foregoing paragraph, has lately urged that milk be examined not only in respect to its solids and fats, but also as to its contents in filth, after a method employed by Professor Renk, of Halle. The latter found that the public milk-supply of Halle was polluted by very considerable amounts of filth which settled to the bottom of the vessel containing the milk, and by microscopical examination proved to be largely cow's excrement. The average of thirty tests showed fifteen milligrams per litre, or fifteen parts per million, of such filth deposited by the milk of Halle. In Leipzig milk, Renk obtained 3.8; in Berlin, 10.3; in Munich, 9.0 milligrams of similar filth deposited per litre. He found the bacteria in the Halle milk-supply to vary from 6,000,000 to 30,000,000 per cubic centimetre, a result agreeing well with its unclean condition. It may be remarked in passing that the sewage of American cities seldom averages more than 1,000,000 bacteria per cubic centimetre.

V. REMEDIAL MEASURES.

It is clear that the improvement of the conditions indicated above must consist in greater cleanliness in milk production and less delay in its delivery. So far as pollution is concerned it is possible to make great improvements by requiring cleaner stables; those which exist at present being often (from the standpoint of mere decency) simply abominable. The cows might also be kept much cleaner and, if necessary, washed above and upon the udder with warm water before milking, or at least cleaned and groomed as horses have long been. The milkers might be compelled to have clean hands, and taught to avoid pollution of the milk. That the milk-pail might be improved, and even kept partly covered, has been demonstrated by at least one invention now actually in use.

If the milk could thus be kept decently clean and nearly free from bacteria—the seeds of decomposition—and then quickly cooled to a low temperature its decay would be very slow, and its "keeping qualities" would be greatly increased. It could afterwards be transported over even long distances without damage, provided only that a very low temperature were constantly maintained. Under existing methods, however, quick delivery is essential, since the milk is richly seeded with filth at the very outset, and only imperfectly chilled during its journey to the consumer. To permit of all these improvements it is possible that a higher price might have to be paid for clean and fresh milk as is now done for fresh-laid eggs.

Finally, it does not seem unreasonable to urge that the whole matter of the public milk-supply deserves at least as careful attention from the public sanitary authorities as does, for example, the public water-sup-

ply. If questions of uncleanness and staleness do not seem to justify this conclusion, it is only necessary to add, inasmuch as milk is now believed to be one of the important vehicles for the distribution of tuberculosis, scarlet fever, typhoid fever and other infectious diseases, that the question of its possible infection is always of the highest importance. The time must soon come when our present neglect of the milk-supply problem shall cease, and when we shall no longer be satisfied with chiefly preventing the cheating connected with its dilution by water.

SOME USES OF THE STOMACH-TUBE.¹

BY E. M. BUCKINGHAM, M.D.

DURING the past few years it has happened to be my fortune to use the stomach-tube a limited number of times in cases of various kinds; and while the number of cases has been small, much smaller probably than has come to some other members of the Society, yet it has given me some positive ideas on the subject. If, as I believe, the use of the tube is not very common in this neighborhood, possibly a report of the cases may not be without interest.

One of the first things that struck me in the matter was the ease, to the physician at least if not to the patient, with which it is introduced, provided always the tube is held in one vertical plane and in the median line as it passes behind the tongue. I mean that the only curve should be from above downward, and that there should be none from side to side, in which latter case the tube is very apt to catch. I think, too, that milk, while sometimes used as a lubricant, is not so good as something more tenacious, oil for instance. The operation is somewhat facilitated by the patient's swallowing, but the operator can gain time, and save discomfort to the patient, by pushing gently at the same time.

A second point is that it is extremely disagreeable to the patient. One hears of patients who become accustomed to it or who even at first make little objection. I have not seen such, the only exception to this statement being the case of one hysterical woman. On the contrary, the disagreeable nature of the treatment is sufficient in my opinion to cause it to be avoided except where its use is imperative; and this rule will, I think, exclude it in some cases where recovery might be hastened by its use, but where other methods, although slower, promise to be effectual.

A third point is, that, while the tube is commonly introduced with the patient sitting, and the head thrown back in order to straighten the passage from mouth to stomach, yet it is sometimes, at any rate, equally easy to use it with the patient flat on the back and that the patient must be deeply narcotized indeed, for this position to create danger from water flowing toward the mouth in quantity to do harm by entering the glottis.

A few cases of nervous dyspepsia in my care have been helped, as perhaps they might have been equally by electricity or any other course which appealed strongly to the imagination.

Lastly, as has been much more abundantly proved by others, cases of catarrh of the stomach, with or without constriction of the pylorus, are capable of much benefit from systematic washing out.

The following cases all occurred at the City Hospital, and would not be reported as yet, but for the slowness with which I have been able to collect them. During a recent continuous service of about seven and a half months divided between out-patient room and wards, although on the alert for opportunities, I have met but two cases in which the advantages of this treatment seemed to me to overbalance its annoyances. The cases are arranged for convenience and not chronologically.

CASE I. A man was brought into the hospital by the police, completely unconscious; pupils equal, and with slow reaction to light; face flushed; no rigidity. The breath had a peculiar odor which no one present was willing to say was alcoholic. Urine obtained by catheter was not albuminous. There was no history, the man being brought in as the police found him in the street. The tube was passed with no difficulty the patient being flat on the back; and the stomach was washed repeatedly with a quart of water at a time. There was no overflow of water. This patient proved to have been drinking enormously, and was discharged the next day. The only point of interest about it was the ease with which it was done.

CASE II. A woman, picked up by the police in Franklin Park totally unconscious, with an empty landau bottle by her. Symptoms of extreme opium-poisoning on entrance to hospital. Urine obtained by catheter contained albumen. She was immediately placed by the house-officer on her back with the feet elevated, on account of heart weakness. Artificial respiration and faradism were applied. Coming into the hospital immediately after, I attempted to wash out the stomach in this position, if possible, and found it difficult to get the tube into the stomach, on account probably of the resistance of gravitation to the flexible tube. After it was inserted water introduced slowly began to run out by the mouth, and the attempt was abandoned until the patient had been placed horizontally, after which the stomach was washed with no more trouble. The woman died some two hours later. In this case the whole interest lies in the difficulties made by the position of the patient.

CASE III. This is somewhat unusual. A man of forty-five was admitted to the hospital on the eighth or ninth day of typhoid. He had a temperature of 104°, which was not much affected by cold sponging, and he was rather weak. He was given an ounce of rum every eight hours. On the second day after admission the temperature rose to 105°, and fell suddenly during the night. At my next morning visit the nurse had just reported that he had ceased to answer questions and could not swallow. This was a sudden collapse in a man who had not been much stimulated. There was little hope of treatment by the rectum, and I introduced a tube into the stomach and poured in about a tumblerful of rum and carbonated water in equal parts. In the course of fifteen minutes he had revived and was able to swallow; most of this mixture was retained, although a little was vomited. He was stimulated heavily for a few days, and finally recovered. I am by no means sure that the result was better than would have followed subcutaneous stimulation.

CASE IV. This case, and perhaps the next one, belong to a different class. A woman was discharged from the hospital partly relieved from an attack of great debility and hysteria brought on by overwork and sorrow. A week later she returned, salivated by

¹ Read before the Suffolk District Medical Society, October 31, 1891.

persistent use of calomel as a cathartic. Her appetite had been ravenous, but now, because of her sore mouth, she was unable to eat, although hungry. After recovery from mercurial stomatitis, she continued unable to eat because of pain in the epigastrium; which pain I believed to be hysterical, but she believed it to be due to extension downward of inflammation from the mouth. Her stomach was washed out once at the suggestion of the house physician Dr. Robinson, and the good effect was immediate. He tells me that she wanted it done, and that it did not appear to be disagreeable. I was not a personal witness, but can readily believe that he was right. This is the only case of the series, however, in which patients have not made more or less objection.

CASE V. American woman of forty. Two hours after eating, gnawing pain in stomach and occasional nausea, which had continued for four years; during which time she had menstruated too freely and too often; she having a uterine tumor which was believed to be fibroid. She had had a similar gastric trouble thirteen years before. There was a strong family history of cancer, and she was anxious about herself. She had entered the out-patient room during the service of my colleague Dr. Withington, and after other treatment he had washed out the stomach, for the sake of the local stimulating effect. The effect had been good, and I continued it at intervals of a week for about four months. She disliked it, but showed courage in persevering, and reported herself as continually getting better. A part of her strength being lost with each menstruation, she was twice sent into the hospital at such times for observation. Dr. Mason, in whose service she first entered, caused the stomach to be washed every day for a week, and afterward less often. She remained in his service for about a month, remaining in bed during menstruation, without serious flowing, and gained in every way, although the stomach continued to have bad days. The following month she again entered the hospital. A little later she became discouraged, pain returned, and she passed out of sight. After an interval of a year and a half I learned that she had been very sick since leaving the hospital, was said to have got entirely well in less than a year, and had moved, no one knew where. The benefit of washing in this case seems to me to have been entirely in its effect on the imagination.

The remaining cases are of organic disease of the stomach.

CASE VI. Man of thirty-six. Had been a drinker. For six months had complained of his stomach — eructation, vomiting and tenderness. Had got relief from beer and from charcoal. Percussion showed a large area of stomach resonance. The stomach was washed out twice, each time with marked relief to symptoms. There was no undigested food and little mucus in the effluent. My term of service ending, he passed from my observation; but I know that he died within a few months, of cancer of the stomach, which diagnosis was verified by autopsy.

CASE VII. Probably cancer of pylorus, but no autopsy. Vomited after meals for a year, dejection every two or three weeks before entering hospital. Mass in region of pylorus about four inches in diameter. Soon after entering, had vomited about two quarts of light-brown fluid containing undigested food. Being fed entirely by rectal enemata and still suffering from intense nausea, I washed out the stomach, to his great

relief, removing from one to two quarts containing much undigested food that must have been taken at least three days before. On the following day the stomach was again washed, getting away more undigested food with a dark sediment, and he became very comfortable. From this time to his death, in about two weeks, there was no complaint except of weakness. He became unwilling, however, to take any food by the mouth lest it should again necessitate the use of the stomach-tube, the advantage of which he appreciated, but to which he had a great repugnance notwithstanding.

CASE VIII. A heavy drinker, with frequent vomiting, the ejected matter consisting largely of mucus. This patient vomited out the tube before it was quite inserted, and again while water was running through it. It was introduced a third time and the stomach thoroughly washed, the patient frequently retching during the process. He never presented himself for a second treatment.

CASE IX. Frequent vomiting of much mucus apparently dependent on improper food. Washed; getting rid of much mucus. No second visit.

CASE X. Man of twenty-eight. Emaciated, debilitated, vomiting mucus for six weeks. Owing to his occupation he could not attend to himself regularly, nor could he enter the wards. In addition to other treatment he was washed three times in twenty days, but he got no better, and ceased to attend. Probably this case is of no value, owing to irregularity of treatment.

CASE XI. Is the last and most satisfactory of the series, — a man of thirty-nine, of good habits, a tailor, whose sickness began with severe diarrhoea and gastric disturbance. These were not treated, he remaining at what he called unusually hard work. He recovered from diarrhoea, became somewhat constipated, and suffered from pain after eating, anorexia and nausea. After a while he gave up work, and for fifteen months spent most of the day on the bed because of weakness. He had had many physicians, the last of whom, a perfectly competent man, had treated him for some months without benefit. His present condition was much emaciated, flatulent, and with stomach resonance extending nearly or quite to the umbilicus. For two months the stomach was washed with a weak, hot solution of sodium bicarbonate in water as late after breakfast as possible, and at first three times a week. The first few washes brought away undigested food and much mucus, nearly clogging the tube. These diminished with every washing, undigested food disappearing first. The diet was attended to, as it had been before. During the first week, aromatic sulphuric acid was given after dinner. In the second week this was changed to sodium bicarbonate thirty grains in hot water on rising, a means of getting rid of an over-supply of mucus which is sometimes efficient by itself. In the third week, the stomach being now cleaner, this was changed to tincture of nux vomica after meals. At the beginning of the fourth week the effluent water was nearly clear, and after this, washing was done less frequently. Appetite improved; and in the second month he began rowing for exercise; soon worked half-time at his trade; and in two months was discharged well.

Three years later he told me that he had been well ever since. Here was a sequence of fifteen months' sickness, two months' treatment with steady gain that

did not begin before treatment, and three years of health. Recovery was due to washing, not to collateral treatment, for he had been through much of that before.

Clinical Department.

TUBAL PREGNANCY: A CASE.¹

BY G. H. WASHBURN, M.D.

Mrs. G. is a pale, slender, rather delicate woman of thirty-five years. She has been married seventeen years, and has never been strong since the birth of her first child. For the past nine years she has been afflicted with chronic bronchitis, lasting the whole winter, anyway, and sometimes longer.

She has had four children, sixteen, fourteen, twelve and nine years ago respectively. She describes the labors as all quite easy. She was attended in every case by a midwife. All her children were thin, and their heads not specially large.

Her first labor lasted about three hours — from the commencement of the pains to the birth of the child.

Her second pregnancy was characterized by considerable pain and vomiting, etc., and at about the fourth month she had to go to bed. It was four or five weeks before she was able to get up again. The labor lasted only about two hours.

The third pregnancy was not so uncomfortable as the second. The labor lasted scarcely two hours, and the child was born before the midwife could get there.

Her fourth labor was the hardest, lasting about six or seven hours.

She has had one abortion, occurring five years ago. This was somewhat peculiar. She went along for about six weeks with all her usual feelings and discomforts accompanying pregnancy. Then, very curiously, these ceased, but there was no return of the catamenial flow. There were, however, little driplets of flow off and on at irregular intervals, and considerable leucorrhœa. After six months of this she went to a physician who "scraped the womb," and got out considerable bad smelling débris. After that her menstruation returned and was regular until the present pregnancy.

Menstruation commenced when she was thirteen or fourteen years old; it has appeared regularly every twenty-eight days until the past year, when it has been every twenty-six days. The flow lasts six or seven days, during the first three of which she uses about three napkins daily, the rest of the time one or two a day. There is some pain for two days before, and for the first two days of the flow.

There is some *leucorrhœa*, thick, viscid and yellowish, non-irritating. This would be discharged in gushes, but the amount was small — only about a couple of drachms — and there was no pain immediately preceding the discharge.

The patient has never felt well since the birth of her first child. There has been pain in the lower part of the back, bearing-down pains and other discomforts. The bearing-down pains were only occasional at first, coming perhaps after some over-exertion or long walk. They have been increasing, however, and lately have been worse and more persistent.

Two years ago, without any cause that she can recall, she began to have a pain in the right groin; for the past year this has been constant, and occasionally it has extended across to the other side. Her pain and discomfort is worst when she is on her feet.

There has also been a spot in the right inguinal region which, for the past two years has been very tender on pressure. It has felt specially sore and sensitive after going to bed, so that even the pressure of the bed clothing upon it has been painful. This small sensitive area has been much more comfortable during the catamenial flow.

Bowels have been quite regular.

Micturition about normal.

Urine normal.

Sleep has often been disturbed by pain. She has generally wakened in the morning feeling tired instead of refreshed.

Appetite and digestion have been good.

With the exception of some frontal headache her general health has been quite good the past summer.

I saw the patient the last of September, having been called in consultation by Dr. Gillespie. Her last menstruation had ended seven weeks previously. Twice since that, however, she had a little show of blood, the last time being about September 1st. The middle of August she had begun to have nausea and vomiting. This soon became almost constant. She could retain nothing on her stomach except some broth, and at times that would come up too. When she took nothing a clear, frothy, acrid fluid would come up by mouthfuls. Her sleep was disturbed by this continual regurgitation. Her strength, color and flesh were rapidly wasting, and she was unable to leave her bed. Dr. Gillespie had tried all the usual and unusual remedies in a vain effort to relieve the vomiting.

Examination showed a uterus considerably enlarged, especially in its length, and seemingly farther advanced in pregnancy than the date of the last menstruation would warrant one in believing. The uterus was retroverted (about the second degree) and apparently tipped to the right also. There was a large tear of the cervix and perineum. The lips of the cervix were everted and much eroded. Pressure in the right inguinal region gave some pain. The supposition was that the malposition was the cause of the vomiting. The uterus was replaced, in the knee-chest position, and held up by a packing. Scarcely two days later, there was not a particle of relief to the vomiting. However, owing to the extensive tear of the perineum the packing had slipped somewhat, allowing some descent of the uterus. Then a pessary was adjusted which held the uterus up in very good place. Still there was not the slightest letting up of the vomiting, and the steady failure of strength continued.

The cervix was now painted with Churchill's tincture of iodine. The effect was to cause marked improvement in the local condition, but none whatever in the vomiting.

As all these expedients, medicinal and mechanical, had failed utterly to produce the slightest amelioration in the patient's condition, as she was very weak and rapidly failing, and as, moreover, the damp weather was impending, when she might look for the advent of her annual bronchitis, it was deemed best to induce an abortion. For this purpose a large bougie was introduced four inches into the uterus and fastened there, due antiseptic precautions having been taken. For a

¹ Read, by invitation, before the Obstetrical Society of Boston, November 14, 1891.

few hours after its introduction it caused some pain or pains in the right side and some discomfort in the back. For the remainder of forty-eight hours it did not seem to have any effect, locally or on the vomiting.

It was now determined to curette the uterus. The patient did not wish to take ether — she was a plucky woman — and as the uterus did not seem very sensitive, we went ahead without it. The os dilated readily with a Goodell-Ellinger dilator. A broad, dull curette was used. The uterus was found about four inches and a half deep, but at first appearance there was nothing in it; soon, however, a resistant mass was felt up in the right corner; scraping brought away only a few bits of tissue. An effort was now made to bring down something with the placenta forceps. Presently something was grasped by the forceps. Steady but gentle traction was followed by a sudden gush of several ounces of clear fluid, but no tissue was brought down. There was not much bleeding.

It was now deemed best to discontinue any further manipulation. A strip of iodoform gauze was introduced into the uterus and packed lightly into the vagina. Instructions were given to remove this the next day.

The night following the removal of the gauze severe, cramp-like pains came on, increasing in intensity. These lasted for about five hours, then ceased quite suddenly. They did not call any one till morning when Dr. Gillespie was summoned. He found the legs of a small fetus protruding from the os uteri. Passing his finger into the uterus as far as possible he found a long mass extending up into the right cornu. Grasping the fetus and its envelope he drew down a cigar-shaped mass about four inches long, and about two inches thick in its largest diameter, the surface a little convoluted, the fetal sac hanging from the larger end.



Placenta as seen from behind, as it came from the right tube. Specimen is a little shrivelled by being in alcohol. A shows the cavity of the sac, held open by two small splinters. The whole placenta was in the tube, and the sac protruded somewhat into the cavity of the uterus.

I did not see the patient till that afternoon. Vomiting and even nausea had entirely ceased and have not returned since.

Convalescence has progressed satisfactorily without rise of temperature or other untoward symptom.

Menstruation appeared on the 5th of November lasting until the 11th. There have been two gushes of blood, but the flow altogether has amounted to only twelve napkins.

Examination on November 13th, just four weeks from date of expulsion of fetus and membranes, shows the following condition: Uterus retroverted, second degree or a little more, cavity not measured, but bimanually shows that involution has been progressing satisfactorily. The left tube and ovary feel normal. The right ovary not felt, but the tube seems about the size of the little finger and twisted like a knuckle of intestine, somewhat tender on pressure. She has been gaining in strength, and is now about her household duties.

To review the case briefly:

There were no attacks of severe pain, in fact there was no more pain experienced than had been present for the past two years. There were no attacks of bleeding, unless you would call such the two times when there was a slight show of blood.

The important fact which was noted in the first examination was not given sufficient weight as showing a tubal pregnancy. I refer to the apparently lengthened-out shape of the uterus, out of proportion to its diameter at that stage of pregnancy, the enlargement, moreover, extending to the right.

There was present persistent vomiting, unrelieved by medicinal or mechanical means, reducing the strength of the patient so as to demand operative interference.

The introduction of the bougie was unattended by results.

Not only did the curette fail to bring away much of any tissue, but the placenta forceps did not grasp anything until they were passed well up into the right cornu of the uterus.

Evidently the whole placenta was in the tube, but a part of the sac protruded into the uterine cavity. The specimen proves the correctness of this supposition.

The traction and opening of the sac, and the stimulating of contractions by the introduction of the iodoform gauze into the uterus, loosened the placenta and allowed the uterine contractions to force it down.

Finally, a large tube, the enlargement most apparent at the uterine attachment, remains to show the site of the placenta.

It is interesting to note the immediate cessation of the vomiting as soon as the uterus was emptied.

A CASE OF PROBABLE TUBAL PREGNANCY.¹

BY EDWARD REYNOLDS, M.D.

On the 6th of last August, I was called to the country to take charge of the case of Mrs. X., secundipara, with the following previous history.

In her first pregnancy, she was afflicted with extremely severe vomiting. Becoming a patient of Drs. W. H. Baker and F. H. Davenport, she was discovered to have a retroversion of the uterus, which was relieved with much difficulty by prolonged packing of the vagina. After the relief of the displacement, the vomiting gradually subsided, and she went to term without further accidents, and was safely delivered after an easy labor.

During the first weeks of her second pregnancy, her social duties subjected her to considerable fatigue: and when a little less than two months advanced, she was

¹ Read before the Osteatrical Society of Boston, November 14, 1891.

again troubled by quite severe nausea and vomiting, which became steadily worse until I saw her, at which time she was a little more than three months advanced. She had then been confined to her bed for nearly a fortnight, had failed to retain any considerable amount of food for more than ten days, and had been vomiting excessively for five or six days, during which time she had retained upon her stomach no food whatsoever, and had been nourished solely by enemata. The rectum was becoming intolerant. She was already very weak; the pulse was about 110 or 112. Any attempt to move in bed, any noise or jar in the room, in fact, any external stimulus, caused attacks of vomiting, which were seldom fifteen minutes apart. No local examination had been made. I found the uterus retroflexed and retroverted, the fundus upon a level with the cervix, and not readily to be raised. Under ether, it proved to be impacted between the utro-sacral ligaments, but it was not adherent and was readily raised into position by taxis.

The uterus seemed to me to be slightly irregular in shape, the right side being much more prominent than the left, and the right cornu seeming to extend into the broad ligament, in a way which at once suggested the possibility of an interstitial pregnancy, or of pregnancy in one horn of an asymmetrically developed uterus. I am bound to say, however, that although this possibility was suggested to me at the time, I felt that the results of examination were not sufficient for the formation of the diagnosis.

The uterus was easily retained in position by the insertion of a pessary, and after the recovery from ether there was no vomiting for several hours. It then recurred, though in a somewhat less severe form than before. I could detect no erosions upon the cervix uteri.

The patient was removed from an extremely noisy room in the hotel to one in which comparative quiet could be obtained, and the next day was spent in the administration of enemata. The vomiting was still distressing, though decidedly less than when I first saw her.

During the next night, she was attacked by sharp, colicky pains in the right iliac and inguinal regions, of a character which she described as closely similar to labor. The attack subsided spontaneously after a few hours, and was not followed by any relief of the nausea. On the following morning, her pulse ranged from 120 to 130 beats per minute, and her exhaustion was extreme.

In the belief that any further attempt to preserve the existence of the fetus would almost certainly result in the loss of both patients, I decided upon the immediate induction of an abortion. The os was found, as upon the preceding day, soft and slightly patulous, and was easily dilated with branching steel dilators to a size which admitted the index finger. The intact membranes presented at a level slightly above that of the internal os, with which they were not in contact; and behind them could be felt the head of the fetus.

Feeling anxious, on account of the uncertain condi-

tion of the right broad ligament, to avoid all unnecessary manipulations, I passed into the uterus the blades of a pair of ovum forceps, and was fortunate enough to succeed in extracting by their use a complete, though badly lacerated ovum. The placenta was fully formed, the size and appearance of the fetus corresponded to a pregnancy of a little more than three months. On again passing the finger into the uterus, I found a condition which I have endeavored to represent in the diagram which I pass around. The evacuation of the uterus was followed by immediate relief of vomiting; the recovery was prompt and uneventful.

The history and results of the intra-uterine examination seemed to me to render it probable that the case was originally one of interstitial pregnancy, which was converted into an approximately normal form by the efforts of nature, during the night which preceded the delivery; and, although I do not consider the diagnosis as by any means established, I think that the rarity of such a condition renders the case worth reporting, and especially in connection with the very interesting and well established instance which Dr. Washburn has detailed to us.

A CASE OF TUBAL PREGNANCY.¹

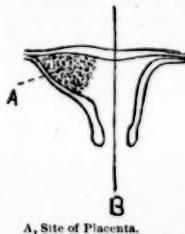
BY F. B. HARRINGTON, M.D.

Mrs. M. J., thirty-three years old, widow, never before pregnant, passed the time of her period by two weeks, when flowing came on with considerable pelvic pain unlike any previous menstrual distress. The discharge was slight but continuous. The pain was at the right side of the pelvis. The flow continued with increasing pain for three weeks when I first saw her. The abdomen was tender and slightly distended. Vaginal examination showed a mass on the right side of the pelvis resembling a dilated tube. There was tenderness and thickening about the mass. The patient was put to bed, and was given opiates and douches. The bloody discharge ceased in about a week, but soon returned again in slight amount. The pain gradually diminished. The bloody discharge ceased entirely in about six weeks from its first appearance. The tumor at the right side of the uterus had increased in size until it was nearly as large as a large lemon. It was still tender to the touch and gave the patient a feeling of discomfort. After a two months rest the patient was much improved in general health, but the tumor remained a source of great discomfort to her.

Removal was advised. The mass was found to be the dilated right Fallopian tube which appeared to contain fetal remains with a considerable amount of bloody fluid. The fetus had probably died at from five to six weeks.

The following is Dr. Whitney's report of the specimen:

"Tube and Ovary." — The portion of tube measured about twelve centimetres, and walls were thickened. About eight centimetres from fimbriated end was a nodular enlargement chiefly opposite the side of the ligament. This measured about nine centimetres in circumference. The surface of the tube was covered with rough fibrous adhesions. The cavity was dilated and shaggy, and the enlargement filled with a villous-looking mass, and from this a thin membranous sac was continued to the fimbriated end, and projected



A, Site of Placenta.
B, Median Line of Uterus.

¹ Read before the Obstetrical Society of Boston, November 14, 1891.

slightly beyond. In this part was a hard reddish nodule the size of a pea which on section showed a small differentiated mass recalling the outline of a very young embryo. Microscopic examination showed round cells with an embryonic arrangement, and at one end was an accumulation of pigment. Microscopic examination of the villous mass showed small finger-like projections similar to those of the chorion.

"The Ovary was small and contained a few retention cysts, but no corpus luteum. It was situated opposite the tube about eight centimetres from the fimbriated end."

The patient made a good recovery.

Medical Progress.

RECENT PROGRESS IN DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D.

GASTRIC DIGESTION IN SMALL CHILDREN, AND IRRIGATION OF THE STOMACH.¹

THE following propositions include the substance of the author's paper:

(1) The presence of completely coagulated casein in the stomach does not warrant one in speaking of the excessively acid contents of the stomach, for a precipitation of the casein from the solution can only happen in consequence of the influence of fermentation and this acts in the presence of an alkaline reaction.

(2) The change of the casein, which has begun to coagulate, to the state of solution with subsequent peptonization is due to the simultaneous action of acid and pepsin, and the stomach takes up the albumen the more successfully and completely the more the quantity and composition of the digestive secretions approach the normal.

(3) Lactic acid must be regarded as a normal constituent of the gastric juice, at least in very young children and in those with whom the diet is exclusively one of milk, and its formation is encouraged by the milk-sugar which is abundant in the milk. This constant presence of lactic acid has its effect alike upon the digestive process and upon the action of microbes.

(4) Hydrochloric acid plays the principal part in digestion, but its determination is not always easy, because the casein of the milk has the property of holding it until digestion begins. Hydrochloric acid may usually be found in small quantities in the stomachs of very small children. As digestion increases in activity, the quantity of hydrochloric acid also increases.

(5) The quantity of acid in the gastric juices of children is relatively very much smaller than in adults, and is conversely as to the quantity of food taken into the stomach.

(6) The average time during which food stays in the stomach of small children is two hours.

(7) Slight mechanical, thermic or chemical irritation of the gastric mucous membrane will increase the acidity of the secreted juice and favor a rapid emptying of the stomach. Alcohol stays digestion, but counteracts fermentation.

(8) The part in digestion which is played by the stomach of the child is an important one, even though

¹ Trotzky: *Jahrb. f. Kinderh.*, xxxii, 4, *Archiv. Pediat.*, vol. viii, November, 1891.

it does not appropriate all the albumen which comes into it.

(9) The anti-microbial properties of the gastric juice are undoubtedly, and due to the presence of free acid, especially hydrochloric acid. In consequence of the slight acidity of the gastric juice in the stomach of children, it cannot act as forcibly to retard fermentation as the same secretion in the adult.

(10) It has not yet been determined what significance certain micro-organisms have upon digestion.

(11) Functional disturbances in the stomach of children are due to changes in the quality and quantity of the gastric juice, the regular exchange in its ingredients being disturbed, or the parts being subjected to physical or chemical changes which are not yet understood.

(12) The quantity of gastric juice in the stomach of children may be lessened without necessarily causing an increase of lactic acid, or the appearance of acetic or butyric acids.

(13) When the normal secretion of the stomach is deficient, acids are developed which are not suitable for normal digestion.

(14) The presence of too much mucus in the stomach may paralyze the digestive activity of the gastric juice, though the latter may be normal as to quantity and as to composition.

(15) If too much food enters the stomach, or if it remains there too long, an insufficient quantity of gastric juice will be secreted for its digestion.

(16) The majority of gastric dyspepsias in children are caused by the deficiency of hydrochloric acid in the gastric juice. Functional disturbance is rarely caused by excessive secretion of gastric juice.

(17) Diseases of the stomach with definite anatomical peculiarities, manifest themselves by the presence of an abundance of mucus, serum and inflammatory elements. The severer the disease and the longer it lasts, the more conspicuous will be these elements.

(18) With inflammation of the gastric mucous membrane, digestion is reduced to a minimum, even if the gastric juice remains normal in quantity and quality.

(19) Disturbed digestion is accompanied by the appearance of an increased number of fermentation-phenomena, with the formation of acids foreign to the stomach and its work, as well as the breaking up of albumen and the formation of decomposition-products. The substances which are submitted to fermentation are the fats and the excess of mucus, which ordinarily do not undergo such changes.

(20) A diminution or failure in the presence of hydrochloric acid in the stomach, signifies the formation of pathogenic elements in the soil favorable to such development, the anti-microbial power of a sufficient quantity of hydrochloric acid being wanting.

(21) It is quite possible that certain forms of micro-organisms or their products, are responsible for the different diseases in the stomachs of children. The means for treating the abnormal condition of the stomach, which has been found extremely efficient in numberless cases, is irrigation.

THE ETIOLOGY OF ACUTE DIGESTIVE DISORDERS IN INFANTS.²

Investigation in Germany was first directed to the great mortality of infants during the summer months

² Seiffert: (*Jahrb. f. Kinderh.*, xxxii, 4); *Arch. Pediat.*, vol. viii, November, 1891.

by the published report in America concerning the "Summer Diseases of the Children of New York." Bedra also called attention to the fact that the contents of the intestines in infants who suffer from digestive disorders are similar to organic matter which has undergone fermentation or putrefaction, and that probably these diseases are due to processes of decomposition. At that time, however, the process of fermentation was not thoroughly understood. Eichstedt called attention to the similarity of the dyspeptic fecal evacuations of infants with fermenting substances. Attention was next called to the high atmospheric temperature and depression of the surface (ground) water during the months when summer complaint prevails.

These facts, together with the yearly occurrence of the disease in an epidemic form, rendered it possible that the vitalistic fermentation theory of Pasteur might throw light upon the pathology of the condition.

Then Baginsky showed that with the increase in the temperature the mortality among infants from diarrhoea increased, especially in neighborhoods where the hygiene of the home was bad. Thus the disease might arise from miasmatic influences proceeding from fermenting substances, or from direct decomposition of milk in consequence of the action of spores upon it.

Meissner agreed with Baginsky's view, especially observing that the disease occurred when children had been fed from dirty bottles, and that breast-fed children seldom suffered with it. Many other observations followed the foregoing, the opinion steadily gaining ground that the disease was due to fermentation.

Le Sage has divided the digestive disorders into the following classes:

(1) That in which the cause consists in fermentation of the contents of the stomach.

(2) The lienteric, which is due to deficient digestion of the milk.

(3) Diarrhoea, caused by reflex processes in teething and in taking cold.

(4) Infectious diseases of the intestines, which may be due to poisons resulting from the decomposition of the food by micro-organisms, or to general infection, with a specific parasitic bacillus, analogous to the process in cholera.

(5) A bilious green diarrhoea.

Escherich distinguishes three forms of digestive disorder caused by the use of decomposed milk:

(1) Isolated fermentation of the stomach, causing retching, acid vomiting and dilatation of the stomach.

(2) Acid diarrhoea, caused by fermentation in the large intestine, which is carried on without the presence of oxygen.

(3) A colitis with feculent diarrhoea, caused by fermentation in the large intestine.

Clinical experience, as shown in the successful treatment of gastric disorders by irrigation of the stomach, and the antiseptic treatment of the entire alimentary canal, force the conviction that these disorders which are under discussion are the result of decomposition processes, which are caused by bacterial agencies. Starting with the hypothesis that the contents of the alimentary canal are the substratum from which the intoxication which gives rise to gastrointestinal disease proceeds, the following questions are submitted:

(1) Do the contents of the stomach in dyspepsia in young children have a relatively greater quantity of

micro-organisms than the contents of the stomach of healthy children?

(2) Is there a relation which can be determined between the relative quantity of germs in the stomach of sick infants, and the intensity of the disease from which they are suffering?

(3) What are the relations between the relative quantity of germs in the contents of the stomach and the intensity of the disease on the one hand, and climatic factors, which influence the destruction of the milk, the factor of temperature particularly, on the other hand?

To answer the foregoing questions, a quantitative bacteriological analysis was necessary, of contents taken from the stomach of a living child.

Investigations of this character on an extensive scale were made by the author, and from these it was concluded that in the acute dyspepsias of infants one has to deal with spores, which are antagonistic to the acid of the contents of the stomach, are introduced with the nutriment, and develop luxuriantly at the temperature of the body. The phenomena of severe dyspepsias, and especially those of cholera infantum, are the phenomena of acute intoxication; hence, it is reasonable to seek for the cause of the disease in the poisons generated by the saprophytes of the contents of the stomach.

These diseases are most destructive at the time when high temperature, through the action of micro-organisms, works destructive changes in food-substances, and almost disappear when the weather becomes cool. There are also cases which have the character and etiology of general infectious diseases.

These diseases are not epidemic or endemic in the same sense as the continued fever, lacking the characteristic developments and history which such general infectious diseases have. For the further elucidation of the etiology of acute dyspepsia, the chemical changes which are caused in the milk by the bacteria found in the stomach, must be studied, especially by experiments upon animals. Subcutaneous or intravenous injections of the bacteria should be made upon suitable animals.

DILATATION OF THE STOMACH IN CHILDREN.⁸

The high mortality in infants and children from disorders of the digestive apparatus has long furnished a difficult problem in therapeutics to pediatricians, and the stomach is the organ which has demanded most earnest study. The therapeutic portion of the subject has been studied with especial earnestness since the French drew attention to the frequency with which dilatation of the stomach occurs in children.

Dilatation of the stomach may enlarge the organ regularly or irregularly. The hour-glass form is a common example of irregular dilatation. It must necessarily produce thinning of the walls of the stomach, and if the condition is prolonged, fatty degeneration and atrophy of the muscular elements of the stomach must take place. The mucosa is anaemic or hyperemic, according to the catarrhal condition which exists.

The causes of gastric dilatation are divided into two categories:

- (1) Those which are due to mechanical obstacles: (a) congenital stenosis of the pylorus; (b) overfeeding and overwork.

⁸ Henschel: Arch. f. Kinderch., xiii, 1 and 2; Arch. Ped., vol. viii, November, 1891.

(2) Those which result from muscular atony, and are caused by, (a) irregular conditions of the constitution; (b) abnormal fermentation in the stomach; this cause far exceeds all the others in frequency.

If dilatation is due to congenital stenosis of the pylorus, vomiting and pain will be present almost from the taking of the first food into the stomach; constipation and flatulence will also be present: anæmia, emaciation and death will soon follow. Those cases of gastric dilatation which arise from constitutional disorders or from overloading manifest themselves more slowly, occasional attacks of vomiting being present, then loss of appetite, until at length the smallest quantities of food are refused. The abdomen is swollen and the bowels are constipated, the tongue is coated, but the temperature remains normal. Occasional attacks of gastric catarrh further weaken the patient, who finally dies exhausted.

If dilatation is due to fermentation, the course is more rapid; gastric catarrh is a more prominent symptom, and with it are associated severe nervous symptoms, chills, depression of the eyeballs, apathy, convulsions, collapse, cyanosis, dyspœa. The most important symptom in making a diagnosis is, of course, the tympanic note, which is obtained by percussion. Another is the succession sound which is produced by the rolling about of the fluid in the stomach as the child is shaken from side to side; but this and other similar signs are not available; if the child is suffering with diarrhoea, the fluid will also roll about in the intestines. The prognosis of this condition depends very much upon the condition of the child in general. It is absolutely bad if there is stenosis of the pylorus. The danger of the situation is increased by the fact that the resisting power of the system is lessened as the child is unable to take nourishment. He becomes more susceptible to intercurrent diseases, and yields to them more readily than when digestion is intact.

One of the most useful means ever devised for the relief of gastric dilatation consists in the irrigation of the organ. The soft sound is safer to introduce into the stomach for an irrigating tube than the hard one. It must not be passed too low lest the end be so bent that the return flow of fluids would be prevented. One may use for irrigation, simply warm water or solutions of resorcin, benzoate of soda, or boric acid. If the dilatation is of long duration, irrigation may be required twice daily. As to diet, Epstein recommends for the first few days albumen water, black tea, oatmeal gruel and milk in small quantities and at frequent intervals. For nursing children, he advises to refrain from weaning as long as possible.

Prophylaxis is, however, the best treatment; it is easier to avoid producing gastric dilatation than to cure it when produced.

TYPHOID FEVER IN AN INFANT.⁴

Typhoid fever being an extremely rare disease in young children, the author has reported the present case at considerable length. The patient was a boy eight months of age, bottle-fed, small, thin, and delicate looking, but well until the onset of this attack. He was first seen on October 2d, the third day of the illness. The temperature was 102.5° F.; the pulse 140. Believing the case to be one of entero-colitis, castor-oil was given, and the diet carefully regulated.

⁴ England: Montreal Medical Journal, February, 1891; Archiv. Pediat., May, 1891.

During the next week the temperature ranged from 102.5° F., in the morning, to 104° F., in the evening, the remission usually beginning after midnight. The spleen became enlarged, and could be felt as a smooth, firm mass two inches below the ribs. The liver could also be felt an inch below the costal cartilage. An eruption soon appeared upon the abdomen, chest, and back, consisting of numerous small, isolated, bright rose-spots, about the size of a pin's head, or a little larger. The diagnosis of typhoid fever was based upon the appearance of the eruption, persistent high temperature, tympanitis, enlargement of liver and spleen, and gastro-intestinal derangement evinced by vomiting, pain, and looseness of the bowels.

During the second week, the temperature ranged from 102° to 103.5° F. Slight bronchitis developed, the eyes were sensitive to the light, and there was evidently pain in the head.

At the end of the third week the temperature had become intermittent, the morning temperature reaching normal on October 17th.

The diet was milk, rice-water, and raw-meat juice. The treatment was symptomatic. Twelve drops of brandy were given every two hours throughout, and tepid sponging and cold to the head were systematically carried out. A full dose of quinine was given if the afternoon temperature reached 103° F. No complications or sequelae followed, and the child made a good recovery.

THE OPERATIVE TREATMENT OF CHRONIC HYDROCEPHALUS.⁵

An operation for chronic hydrocephalus presents no technically insuperable difficulties; but it is important to consider in what cases it is allowable, and what will be obtained by the operation in favorable cases. The results of operations which have heretofore been made are not encouraging. Incision and drainage of the hydrocephalus sac have given no better results than earlier methods. The propriety of such operations might, therefore, be questioned. Of course, not every case of chronic hydrocephalus is suitable for operation. Every intracranial effusion of fluid of moderate extent must be let alone, also those cases of congenital hydrocephalus in which a rudimentary development of the brain is suspected, all these cases being complicated also with spina bifida or some other serious lesion.

Those cases are to be taken into consideration in which, in spite of hydrocephalus, the children are psychically and physically well developed, or at least were so until the enlargement of the cranium began. Such children should show a steady though slow deterioration as the result of cerebral irritation or pressure conditions. Any operative procedure will be the less dreaded in such cases when one realizes the gloomy prognosis without such a possible source of relief. Such children become weak-minded or idiotic. They do not learn to talk at all, or that which is learned is quickly lost. If the pressure conditions continue only a few cases are there which escape total blindness. In an advanced condition of hydrocephalus complicated movements of co-ordination are impossible; walking, standing and sitting may be impossible.

If such a child learns to walk, the gait is wavering and uncertain. Pauses, contractions, partial and general chronic spasms are ordinary occurrences. All

⁵ Jahrb. f. Kinderh., xxxi, 1 and 2; Archiv. Pediat., April, 1891.

these symptoms are more or less conditioned upon the accumulation of the ventricular fluid, and the increase of endocranial tension. The circulation in the cranial cavity is weakened by the pressure, is also retarded, and may be stopped. Thence will arise functional disturbances, and then pathological changes in the brain substance. If the pressure is removed by arrest of the secretion and ossification of the cranium, restoration to a certain extent is possible. Atrophy of the brain is present with most of those who recover, and they remain idiots for life.

In the case upon which the author operated, great improvement took place after each withdrawal of fluid. The comatose condition passed away, the pupils reacted to light, the pulse became fuller and stronger, the breathing regular, and the desire for nutriment returned. The entire condition of the patient was satisfactory until the appearance of pus-corpuscles in the cerebro-spinal fluid removed the hopes of success which had been raised. If suppuration could be avoided, the author thinks that incision and drainage are better treatment for such cases than any other method which has been proposed.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

JAMES J. MINOT, M.D., SECRETARY.

STATED Meeting, Saturday, October 31, 1891, Dr. E. N. WHITTIER in the chair.

DR. F. W. JOHNSON reported a case of

PREGNANCY AND LABOR AT FULL TERM FOLLOWING AN ALEXANDER-ADAMS OPERATION.¹

DR. E. M. BUCKINGHAM read a paper on

SOME OF THE USES OF THE STOMACH-TUBE.²

DR. T. A. DEBLOIS: I have had the pleasure of seeing Dr. Buckingham operate with the stomach-tube occasionally, and, of course, as regards the indications for the operation, no one doubts the usefulness of the stomach-tube in cases of chronic gastric catarrh. It is in regard to the use of the soft tube rather than the hard one I would like to speak. To me as an outsider looking at the operation, the swallowing of the soft tube was much like a young bird swallowing a large worm. The bird seemed to enjoy it, but the patient did not. I have used the stomach-tube a good deal in other gastric troubles. I carried one round for a year without having occasion to use it except for a case of poisoning, and then did not have it with me.

I came to use the stomach-tube to dilate strictures of the oesophagus, and I have found that small rectal bougies made excellent dilators of the oesophagus. I want to bring up one point, and that is the ease with which the stiff tube can be passed. If the head is pretty well back and the left hand on the epiglottis, you can pass it quickly and easily. I think the limber tube is slow to pass. Of course, after the tube is in, one tube is as good as another. Perhaps the stiff one is a little better, because it cannot be constricted by any spasm of the oesophagus.

DR. T. M. RORCH: The subject of stomach washing is an important one, and although it is one of the recog-

nized forms of treatment for chronic gastric catarrh and vomiting, it is not employed in this community to the extent that it is in other parts of the country. When I had charge of the City Hospital out-patients, I had a case which resembled the last one reported by Dr. Buckingham. A young man had for many years suffered from chronic gastric catarrh, with its attending symptoms, and was much relieved in a month or six weeks by the simple process of washing out the stomach with warm water.

We should also perhaps speak of the washing out of the stomach in general, for instance, at what ages you can begin. The stomach can be washed probably at any age without danger to the individual. DR. SEIBERT, of New York, performed the operation on his own child when it was but thirty-six hours old. The child was seized with obstinate vomiting, threatening its life, and one or two washings out with sterilized water stopped the vomiting.

The washing of the stomach in adults was done as long ago as 1869 or 1870, by Kussmaul. Stomach washing in children was begun some years later, about 1880, by Epstein of Prague; and considering the small number of cases in this community where the stomach has been washed by physicians, it is extraordinary to note the number of cases that have been so treated abroad. We here treat with drugs, and it is well known with what little success, in the vomiting of children and in the different forms of catarrh. I am not especially advocating at present the washing out of the stomach, but I do think it is well to bring to the notice of the Society the fact that we are a little too conservative about trying some of these methods for preventing what may lead to even death in young infants, and that we really have not given savage a fair trial.

DR. SEIBERT, of New York, has done a great deal of good work in this direction, as has DR. BOCKER, of Baltimore, at the Wilson Sanitarium; and certainly their reports show that it is a most efficient method for dealing with vomiting and with catarrhal conditions. At the same time I think we should recognize that it is not merely by washing out the stomach that we can effect a cure in these cases. Some physicians hold that all that is necessary is to distend the stomach with water and the catarrhal condition will pass away. That is a little shortsighted. We know that the water in all probability does not enter the small intestine, and that the duodenum may be the nidus where the disease lurks, so to speak, in these catarrhal conditions. Where we have obstinate cases of this class, we are right in saying that stomach washing is part of the treatment, and I know of very few cases where it has been followed by dangerous symptoms. The idea is that in these catarrhal conditions you cannot put a disinfectant in the stomach which will kill the germs. In the first place in all probability the disinfectant will not reach the whole of the stomach. The upper part of the greater curvature will not be reached by the medicines you give. The medicine is either absorbed or passes through the pylorus. If you wash out the stomach, you wash out what is in the folds of the stomach in all probability, and the curds which are formed and which keep up a catarrhal or dyspeptic condition will be removed. DR. JACOBI, of New York, has expressed an opinion of this kind, if I remember rightly, and DR. KOPLIK has reported a number of interesting cases.

The technique of the operation with young infants is the use of the soft catheter about nine inches long,

¹ To be published later.

² See page 28 of the Journal.

or you can increase the length of the catheter with a glass tube. It is said to be very easy to insert the catheter. We must be careful not to distend the stomach too forcibly. An infant's stomach is very easily distended; hence instead of using the fountain syringe we had perhaps better substitute the method, which Epstein originally used, and I believe, continues to use — a simple funnel attached to the catheter.

DR. G. LIEBMANN: The last two or three years I have had considerable experience with the stomach-tube, and especially in catarrh of the stomach. I must say that I think the effect of washing out in ordinary chronic catarrh of the stomach is not exactly what I anticipated. I find that I can bring about an improvement occasionally the first two or three times washing out the stomach, but then the improvement stops, and the results will not go on. I think in such cases the moral effect is as much as the absolute washing out. On the other hand, in dilatation of the stomach I think it is the supreme remedy. With regard to the introduction of the soft tube, I would state that some time ago I exhibited here a stilet or mandrin made of rattan, which I use continually in cases where the patients are nervous. I find I get along much better than before. It is not exactly new treatment. The men in Europe have been using it lately, especially Leube. It is a great adjuvant in the hands of the physician. Before I used this mandrin, I failed in some cases, having to depend on the co-operation of the patient. If he does not swallow, we cannot push the soft tube through the pharynx into the esophagus, and have to give up the passage. The use of the mandrin does away with this difficulty.

I think the greatest triumph of the stomach-tube lies not exactly in the therapy alone but in the diagnosis. If we use the old-fashioned methods of examination of the stomach alone, we are in the dark, whereas, if we examine the contents of the stomach, we know what we are about.

DR. CHARLES P. PUTNAM: I have used the stomach-pump for washing and feeding in a child about eight months old, and can testify to the great ease with which it is done and the good result of the treatment. Dr. Rotch has described the method. The child had been unable to retain food and was extremely restless, but after the washing, it slept for a long time, and after a time was able to retain food swallowed in the ordinary way.

DR. BUCKINGHAM: There is a use of the tube that has not been mentioned to-night. Some new-born babies are too weak either to take the breast or the bottle, or even to swallow. In a certain number of such cases a soft catheter has been introduced, and the child fed through this until it has gained strength.

With reference to the use of the tube being disagreeable, I certainly meant to dwell upon that and am glad to hear from Dr. DeBlois that the stiff tube is less objectionable in that respect. The soft tube, however, is introduced without the slightest trouble to the introducer, the trouble is all for the patient. I must take exception also to Dr. DeBlois's statement that the tube is got in entirely by means of the patient's swallowing. By gentle pressure it is easy to help him very much of course, if the tube was perfectly flexible this would not be true, but the tubes as made are not absolutely flexible because of the thickness of their walls.

DR. CHARLES P. PUTNAM: I once saw a case of diphtheritic paralysis where the child was being starved

to death because unable to swallow any food, and it was without the least difficulty that a large catheter was introduced and food given. The child recovered. The age at which it is said to be difficult is between two and the time when the child can be reasoned with. Up to two years it is easy to introduce the tube, and in the case I mention, it went in without any difficulty at all and without apparent discomfort.

DR. E. W. CUSHING presented a specimen of

DOUBLE PYOSALPINX.

with the following history. A young woman of twenty-three years, married one year, healthy until married, but soon after that time seized with pelvic inflammation, which frequently recurred.

Has been confined to bed for several months. Lately has been very ill and at last came under the care of Dr. Ruddick, who, recognizing the gravity of the case, at once called me in consultation, with reference to operation. On examination, the uterus was retroverted and held down by "adhesion." Bimanual examination showed tenderness on each side of uterus and indistinct masses high up on each side of pelvis. Bowels very constipated, partially owing to free use of opium (no motion for last two weeks). Patient was taken to Charity Club Hospital; bowels moved, opium stopped. Three days later, abdominal section. Omentum adherent; intestines glued together; large pus tube, with abscess sac as big as the fist, in place of ovary on each side, high up and crowding uterus backward; pus very foul. Removal; irrigation; drainage; satisfactory convalescence.

Dr. Cushing called attention to the danger of breaking up supposed "adhessions," which are thought to hold the uterus down, without knowing accurately what the condition is and what the manipulations are doing.

DR. HARE: I have here a cyst removed by Dr. Baker yesterday morning. It is a suppurating dermoid discharging through the bladder for three years. The woman noticed the enlargement about four years ago.

The following committee of five were elected by ballot, to prepare a list of candidates for officers of the Society: Dr. D. W. Cheever, Dr. F. Minot, Dr. F. W. Draper, Dr. T. M. Rotch, and Dr. Morton Prince. The secretaries of the various Sections of the Society were appointed by the President for the ensuing year.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING, November 14, 1891.

DR. G. H. WASHBURN reported, by invitation,

A CASE OF TUBAL PREGNANCY,¹

and showed specimen.

DR. F. B. HARRINGTON reported

A CASE OF TUBAL PREGNANCY,²

and showed specimen.

DR. EDWARD REYNOLDS reported

A CASE OF PROBABLE TUBAL PREGNANCY.³

DR. J. G. BLAKE said that it was strange that so few cases of extra-uterine pregnancy occurred in Bos-

¹ See page 30 of the Journal.

² See page 32 of the Journal.

³ See page 31 of the Journal.

ton, when one considers the large number that are reported from other cities, from Philadelphia, for example.

DR. C. P. STRONG said that in Dr. Harrington's case under ether, there was felt what seemed to be a dilated tube. If the patient had simply rested it is probable that the ovum, which was dead, would have been expelled into the uterus and she would have recovered without laparotomy, but being a working woman, she could not afford to keep quiet so long. This recovery, without laparotomy, is probably the history of a good many cases in places where many enthusiastic laparotomists are not to be found, and may explain the difference in the number of cases reported from different cities.

The cases of both Dr. Washburn and Dr. Reynolds suggested to his mind uteri bicornate. The histories would point to this rather than to tubal pregnancy, for in the latter form there would be more pain.

DR. REYNOLDS said that in his case he had made no definite diagnosis of tubal pregnancy.

DR. F. H. DAVENPORT said, in reply to a question of Dr. Reynolds, that he had detected no abnormality of the uterus, although he had examined the patient in the non-pregnant state.

DR. W. H. BAKER said that in former times cases like those reported would not have been recognized, for it was not known that the ovum could be extruded from the tube into the uterus.

Dr. Goodell, of Philadelphia, was one of the first to call attention to this point. He himself had seen one case where the ovum was expelled into the uterus, and the pregnancy went to full term.

In one case under his observation where haemorrhage occurred, the uterus was thoroughly curetted. The right side of the uterus was found enlarged at the time, but two weeks later, the flowing continuing, examination showed the uterus of normal size and filled with an ovum. There are many cases of extra-uterine pregnancy, however, where there are no marked symptoms until sudden pain and collapse occurs from rupture. In such cases one would not hesitate to open the abdomen at once. In one such case he operated, removed a basinful of clots and also the right tube, which was ruptured and bleeding. This case, unfortunately, died in eight or nine days. Cases suspected to be tubal pregnancies demand careful watching, and Dr. Baker believes that galvanism is most important. In two cases he had used galvanism in strong current, with good effect.

DR. WASHBURN said that four weeks after the expulsion of the ovum he had examined his patient and found an enlarged tube coming out of an enlarged horn of the uterus.

DR. HAVEN said that in a case operated on by him two years ago, and already reported to this Society, the severe pain was what demanded the operation, the characteristic pain of tubal pregnancy.

DR. GREEN said it is strange we see so few cases here in Boston compared with the number of cases reported elsewhere. He has particularly borne these cases in mind, and has never yet found a case, nor has he found that he has overlooked any. Some surgeons in Philadelphia have reported as many as six cases of tubal pregnancy in a year.

DR. BAKER said he had seen twelve cases in the past nine years.

DR. STRONG had seen four cases, and he believed

that it was generally possible to make a diagnosis from the symptoms. In one case, however, all the classical symptoms of extra-uterine pregnancy were present, namely, cessation of true menstruation with a bloody discharge, sudden severe pain and collapse. A mass was felt on the left side of the pelvis; she was operated on in the Massachusetts General Hospital, and a small ovarian tumor was found, and not, as was expected, a case of tubal pregnancy.

DR. KAAN spoke of a case which suggested tubal pregnancy, which in a short time became uterine, and wondered whether these cases were not often found and operated on at once — a fact which would account for the large number of cases reported by some operators.

DR. BLAKE reported some more

GYNECOLOGICAL CASES FROM THE BOSTON CITY HOSPITAL,

and showed specimens of fibroids.

DR. BAKER said he saw once in a while a subserous fibroid that departed from the usual custom, and gave pain by pressing either on the rectum or the bladder.

DR. HAVEN said that in one of his cases the distress from a small fibroid pressing on the bladder was so great that laparotomy was required.

DR. STRONG believed that removal of fibroids by laparotomy would be done more and more in the future, as it entails so much less danger than the operation of hysterectomy. He had recently removed a fibroid weighing six and one-half pounds.

DR. HARRINGTON said that the danger in the removal of large fibroids with thick pedicles was that of hemorrhage and shock, and he thought that curetting, even if it was required every few weeks, was preferable.

DR. BAKER showed specimens of cystic ovaries from a patient of twenty-eight years. She had suffered pain, painful micturition and constipation. On opening one of the cysts a bloody fluid poured out, and the patient became collapsed, but promptly recovered on flushing the abdomen with warm water. The same thing occurred in opening the other ovary, and it seemed as if the patient would die, but flushing with warm water again revived her, and the patient is now doing perfectly well. He wondered whether the collapse could have been due to the irritating effect of the fluid in the peritoneal cavity.

DR. REYNOLDS suggested that the sudden relief of the tension in the ovaries might have caused the collapse.

DR. HARRINGTON did not think that either explanation was the correct one, or it would have been seen in other cases.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON GENERAL MEDICINE.

STATED Meeting, December 15, 1891, FRANCIS DELAFIELD, M.D., chairman.

DR. H. P. LOOMIS read a paper entitled

A STUDY OF THE PROCESSES WHICH RESULTS IN THE ARREST OR CURE OF PULMONARY PHthisis.

He stated that he had made a series of observations extending over the past two years for the purpose of determining the following points:

(1) In what proportion of cases met with on the autopsy table are found the evidences of cured pulmonary tuberculosis?

(2) What are the gross and microscopical appearances presented by the lungs in these cases, and by what histological changes was the cure effected?

(3) After the lungs are healed, are tubercle still present in them?

(4) How often are the evidences of localized or general adhesive pleurisy found, and what effect have such pleuritic changes had on the pulmonary structure?

Of 1,146 autopsies at Bellevue Hospital, 383 were made on persons who either died from tuberculosis or showed in their organs an active or chronic tubercular process. In the other 763 autopsies made on non-tubercular subjects, 276, or 36 per cent., showed lungs which were bound by organized adhesions, either general or local, to the chest wall; these organs being otherwise free from disease, 71, or over nine per cent., presented changes in the lung which he regarded as characteristic of healed pulmonary tuberculosis.

The post-mortem appearances in cases which might be regarded as cured, necessarily varied with the extent of the tuberculosis and the stage to which it had advanced before its arrest. On the basis of their gross appearances he grouped his cases under the following heads:

(1) That class in which the apex of the lung is found adherent to the costal pleura, with a puckered and depressed condition of its surface. Sixty of the 71 cases mentioned showed this condition. On cutting into the lung one or more dense fibro-cartilaginous nodules, varying in size from a cherry to a walnut, were seen beneath the depressed surface, or, if they were situated in the central portion of the upper lobe, they were generally connected with the surface by easily recognizable, dense bands of new connective tissue. In the centre of these nodules a chalky mass was often found, and this was frequently studded with sharp spiculae as hard as bone. In a few cases the indurated portions of the lungs were not nodular, but diffuse and connected with the pleura. Connected with the thickened pleura were white septa running through the lungs, composed of a condensed cellular substance intermingled with fibrous tissue. Often all traces of alveoli had disappeared.

(2) Healed cavities. Six of the cases showed this condition, and they divided themselves into two forms: (a) Where the cavity was empty and communicated with a bronchus; the cavity being situated in the central portion of the lung, closed on all sides, and lined with a thick, dense fibrous or fibro-cartilaginous membrane sometimes half an inch in thickness. (b) Where the cavity was contracted to such an extent by the growth of fibrous tissue (often over an inch in thickness) that it was almost obliterated, and appeared as a linear cicatrix. The adjoining pulmonary tissue was generally found to be the seat of emphysema and to contain patches of interstitial pneumonia. These internal cicatrices were almost always accompanied by puckering of the corresponding surface of the lung with depression of the chest wall.

(3) Two cases came under his observation in which there had been a complete transformation of the whole of an upper lobe into a compact, homogeneous mass of fibrous tissue, without a vestige of pulmonary substance being left.

An examination of microscopical sections presenting the evidences of arrested and healed tubercular processes led Dr. Loomis to the following conclusions:

All fibrous developments result in induration, but it is not easy to determine how or why the tubercular processes were arrested, or how the final result is brought about. At the edge of the pulmonary tissue destroyed by the tubercular process, in many sections, new connective tissue could be seen just forming. This seemed to be derived from three sources:

(1) The intralobular connective tissue had been infiltrated with round cells which were being changed into new connective tissue cells. In some the intralobular septa had been increased ten-fold, and presented an effective barrier to the advance of the tubercular process. The new connective tissue was highly vascularized.

(2) New connective tissue was seen forming in the alveolar walls.

(3) The connective tissue around the vessels and bronchi had become greatly increased. The latter were often almost obliterated by the contractions of the new connective tissue, but the lumen of the pulmonary vessels was but slightly interfered with.

In some sections adhesions of the pleura seemed to be the first step in the development of new connective tissue in the lung substance, and the new fibrous tissues from the pleura and the intralobular septa offered, he thought, a dense barrier to the advance of the tuberculosis, while the incipient softening was not attended, as is usual, by the continued deposition of tubercle. The new connective tissue, by its contractions, encapsulated the tubercular area, compressed and rendered inert the cheesy masses, and limited the advance of cavities, reduced them in size, and finally caused them to cicatrize and entirely disappear. One fact especially impressed him, and that was the hyperemic condition of the tissue surrounding the tubercular areas, where the same connective tissue was forming. Throughout the fibrous tissue new capillary vessels were everywhere seen. An unobstructed circulation and an intense hyperemia were conditions so constantly present where recent fibroid processes were active, that they seemed to be essential to the cure of phthisis.

From fifteen lungs showing the characteristic lesions of healed phthisis, a number of microscopical sections were cut, and these were stained for tubercle bacilli; but in none were any bacilli found.

Inoculation experiments were conducted upon rabbits with the object of ascertaining whether the circumscribed fibrous nodules containing chalky or cheesy deposits, and found generally at the apex of the lungs, contained tubercle bacilli. The settlement of this point, he thought, was important, as this was the only means we had of determining whether phthisis is ever absolutely cured. Even a few bacilli remaining in an apparently healed area must of necessity always be a source of danger to the individual. These inoculation experiments showed that while in the majority of cases no tubercle bacilli could be demonstrated in the healed pulmonary areas, still the fact that they are found in certain instances where the disease had remained latent for an indefinite period, while the nodules presented the same appearance as in the other cases, emphasized the difficulty of determining just when all dangers from all phthisical processes have ceased. Dr. Loomis thought that we might here, perhaps, have an explanation of the sudden de-

velopment of phthisis in those cases where a localized and perhaps forgotten tuberculosis from which apparent recovery has been made, suddenly redevelops.

In giving his conclusions, he said his microscopical examinations seemed to establish that fibrosis is the only method by which tuberculosis of the lungs can be recovered from. The gross description of the lungs which he had given he said was the natural grouping of those which had come under his observation. There was one suggestive fact discovered in his examinations, namely, that whenever the nodular mass or masses presenting the anatomical characteristics of healed phthisis were situated in the substance of a lobe, one or more broad and easily recognized bands of new connective tissue passed from the nodule to the pleura through the apparently healthy pulmonary tissue. At the place where the bands reached the surface of the lung evidences of a localized pleurisy were found, generally with adhesion of the two surfaces of the pleura. The appearance of these bands, so often repeated, suggested that some constant and determinable influences were at work, and he believed that in the study of the lymphatics and the distribution of pigment in the lungs, rested the explanation of their presence.

His examination of the lungs of cured phthisis convinced him that it is not the tubercle which undergoes evolution, but the normal connective tissues of the lungs which surrounds it, and of this connective tissue, it is the interlobular, assisted by that of the pleura, which first increases and is able to resist the advance of the destructive processes. If by any means the vessels in this tissue could be kept open and the capillaries filled with blood, fibrous processes would be established as the result of the irritation and the active congestion. If there was any virtue in Koch's tuberculin, high elevation, or certain indirect methods such as the pneumatic cabinet, might it not be due to the localized congestion which they excited? A microscopic examination of the lungs removed from three patients who had been treated for a long time by injections of Koch's tuberculin, showed a most intense active hyperemia of all the vessels in and around the old fibroid areas at the apex of the lungs, while in these situations an unusual formation of new connective tissue was taking place. When once formed the fibrous growth acted as a bulwark to prevent the extension of the tubercle bacillus. In this way such tuberculous exudation as had occurred would be rendered abortive, and even large ulcerations would be healed and cicatrized by the newly-formed connective tissue. It was a well-known pathological fact that loss of the parenchymatous elements of a tissue or organ is followed by a new growth of connective tissue to take their place. It was necessary that the new growth should be pathological in intensity to be effective where there was much destruction of tissue.

Might not this rule be applied to the lungs to explain the conservative changes which take place in them? In phthisis the pulmonary parenchyma, being of a higher grade of vitality than the connective tissue, is acted upon and destroyed first by the tubercle bacilli. The surrounding connective tissue is stimulated to increased activity by the irritation which is produced, just as occurs in other places in the body, on the application of an irritant. Again, the parenchyma of the lungs being destroyed, the connective tissues must increase to fill the vacancy produced.

DR. J. WEST ROOSEVELT said that from a clinical standpoint it was very important to remember that healed phthisis is not (clinically speaking) phthisis. It was not the kind of phthisis which came under our notice in practice. Doubtless we all saw cases of phthisis which we did not diagnose, and there was no reason why we should do so. In incipient phthisis it was well-known how very difficult it often was to make a diagnosis, and there were in all probability many cases of phthisis which recovered without coming under the physician's care at all.

Dr. Loomis had referred to the great frequency with which pleuritic adhesions were found in the cases examined by him after death (36 per cent.). Clinically, nothing like this percentage was noticed. He hoped that the Doctor would succeed in throwing some light on the dark subject of the lymphatics of the lung, as hitherto it had seemed utterly hopeless to try to understand the pulmonary lymph currents. He did not understand why Dr. Loomis held that pleuritic fibrous adhesions should be considered as secondary to phthisis. It seemed to him that they were merely a part of the phthisical process.

The Chairman, DR. DELAFIELD, said that in his paper Dr. Loomis had given an exact and complete description of the conditions which any one accustomed to making autopsies constantly meets with. For some time he had believed that the reasons for the apparent discrepancies which so often exist between the clinical history and the post-mortem appearances was this, that we have got so much in the habit of regarding all tuberculous inflammations as very serious, if not absolutely fatal, whereas, it was unquestionably true that a tuberculous inflammation, if it occupied only a small area in the body, could be a very little matter; provided it remained confined to a small part. He was convinced that a large number of persons have a very small tuberculous inflammation of a small part of the lung which never even makes them sick. The inflammation runs its course, and they recover from it. Afterwards, when they die from some other cause, the evidences of the previous tuberculous trouble are found at the autopsy.

When larger areas were involved, the inflammation might run its course also, but so much of the lung would have been implicated that such persons could hardly be called very healthy. There would be no longer an active inflammatory process, but the lung would always remain more or less damaged.

As regards the healing of tuberculous lungs by the formation of fibrous tissue, this was a question of very great importance. The presence in the lung of tubercle bacilli was of itself of no consequence. But the bacilli were of consequence when they had excited an inflammatory process. This process either went on to death or underwent healing. These things might happen:

(1) We may have a simple exudative inflammation, with the formation of its characteristic products; and all this exudation may be absorbed and disappear from the lung.

(2) We may have the formation of new connective tissue; and such tissue has very little tendency to disappear. On the other hand, it has a tendency to become changed into a denser connective tissue.

This did not seem to him to be a barrier to further tuberculous trouble, as Dr. Loomis had contended. The only thing that could happen was that it could be

changed to new connective tissue, and it was not, in his opinion, a source of protection against tuberculosis. The paper was a genuine "dead house paper," and it contained an accurate description of a very real thing. The only question was as to how that real thing was to be interpreted.

Recent Literature.

A Practical Treatise on the Diseases of Women. By T. GAILLARD THOMAS, M.D. Sixth edition. Enlarged and thoroughly revised by PAUL F. MUNDÉ, M.D. Philadelphia: Lea Brothers & Co. 1891.

The profession has sadly felt the want of a text-book on the diseases of women, which should be comprehensive, and at the same time not diffuse, systematically arranged so as to be easily grasped by the student of limited experience, and which should embrace the wonderful advances which have been made within the last two decades. Fifteen or twenty years ago, Thomas's work fulfilled these conditions, and the announcement that a new edition was about to be issued, revised by so competent a writer as Dr. Mundé, was hailed with delight.

The examination of the work does not in the main disappoint the expectations which were entertained. Dr. Mundé brings to his work a most practical knowledge of the subjects of which he treats, and an exceptional acquaintance with the world's literature of this important branch of medicine. The result is, what is perhaps on the whole, the best practical treatise on the subject in the English language. The original work is preserved as a basis, but amplified and enriched with the results of modern research. Much has been interspersed with the old material, and several new chapters added.

The difficulties inherent in the task of revising another man's work have been in the main successfully overcome. The only criticism we have to make is that in the new form it has, perhaps, lost a little of its value as a text-book. A text-book on any subject should be simple, definite and not too diffuse.

Where differences of opinion have arisen between the author and the revisor, both views have been fully stated. That adds to the value of the book as one of reference for practitioners who are competent to decide between conflicting claims, but may be of disadvantage to the student who should be taught definite facts and opinions.

In spite, however, of this possible objection, it is, as we have said, the best text-book we know, and will be of especial value to the general practitioner as well as to the specialist.

The illustrations are very satisfactory. Many of them are new, and are particularly clear and attractive. The book will undoubtedly meet with a favorable reception from the profession.

The Comparative Anatomy of the Domesticated Animals. By A. CHAUVEAU, M.D., LLD. Revised and enlarged, with the Co-operation of S. ARLOING. Second English Edition, translated and edited by GEORGE FLEMING, C.B., LLD., etc. With 585 illustrations. New York: D. Appleton & Co. 1891.

It is some eighteen years since we reviewed the first English edition of this classical work. We are told

in the preface of the volume before us that it has since been several times reprinted. The present edition is a translation of the last French one, which appeared in 1890. The work is a very valuable one. The anatomy of the horse is the basis of the book, but there are frequent comparisons, not only with the structure of man, but with that of other animals. The list of these has been increased, the anatomy of the ass, mule, camel, and rabbit having been added. Moreover, recent progress has been noted. The section on the brain is much enlarged. We cannot give it unqualified praise, for we do not believe that the interpretation of the convolutions would be accepted as satisfactory by the best cerebral anatomists. We find nothing about cerebral localization, nor any hint at the relation between the formation of the brain and the peculiarities of faculties in different animals. In spite of shortcomings of this kind, we are very glad to welcome this new edition of an old friend.

T. D.

The Diagnosis and Treatment of Extra-Uterine Pregnancy. By JOHN STRAHAN, M.D., etc. 8vo, pp. 125. Philadelphia: P. Blakiston, Son & Co. 1889.

This is the Jenks Prize Essay of the College of Physicians of Philadelphia for the year 1889, the first award under the deed of trust. It is an essay of remarkable excellence. The style is clear; the difficulties of accurate diagnosis are carefully considered; and the treatment is systematically laid down for the various phases in which extra-uterine gestation presents itself. It is a scholarly work and will prove eminently useful to all who seek to fit themselves to deal with this most important and difficult subject in obstetric surgery.

A Treatise on Practical Anatomy for Students of Anatomy and Surgery. By HENRY C. BENNING, M.D., Lecturer on Anatomy and Surgery in the Philadelphia School of Anatomy, etc. Illustrated with 198 wood-engravings. Philadelphia and London: F. A. Davis, Publisher. 1891.

It is hard to guess what need this work was expected to fill. In parts it is no better than a compendium, and in others it gives glimpses of real merit. As a whole it is quite unsatisfactory. It certainly cannot pretend to rank as a first-class anatomy. It cannot take the place of any of the great text-books. On the other hand it does not have enough merits of its own to make it a valuable adjunct to them.

The Medical News Visiting List for 1892. Philadelphia: Lea Bros. & Co.

This is a very well-known visiting list. The present edition exhibits all the good points of its predecessors, besides having been revised and, where that was possible, improved.

LA GRIPPE. — "Well, Dennis," said the judge, "so you've had the grip. Heard you had a bad time?" — "Tis a terrible disease, sir, sure enough," said Dennis, "I thought I would never get over it. Sure I was sick fifteen days after I got well, sir!"

It is estimated that getting born costs the people of the United States \$250,000,000 annually; getting married, \$300,000,000, and getting buried, \$75,000,000. To the economical mind these figures will at once suggest the most advantageous course of conduct.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, JANUARY 14, 1892.

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THE PRESENT INFLUENZA EPIDEMIC.

THE reports intimate that the present influenza epidemic has been quite as widespread and quite as disastrous as in the two previous years. Indeed in some localities in New England the epidemic has been even more severe and fatal than during the winter seasons of 1890 and 1891.

Three principal types, as usual, have been prevalent, the thoracic, the gastro-intestinal and the nervous, with a very decided predominance of thoracic cases. Indeed, in the majority of instances the physician finds his patient suffering from an attack of acute bronchial catarrh. The fever, however, runs higher, the cough and respiratory distress are somewhat more severe, the symptoms of general prostration are greater, and convalescence is much more tedious than in ordinary bronchitis. It has been remarked that what especially differentiates the "grippal" from common bronchitis is the prostration of the forces. This renders the administration of stimulants from the earliest stages necessary, and explains the unfavorable effect which frequently attends the use of antimonials and even veratrum viride.

Another peculiarity of the disease is the proneness which the catarrhal inflammation manifests to spread to the capillary bronchi, and even to invade the lungs, not merely isolated lobules, but whole lobes. It is only in a comparatively small number of cases that the influenza is pneumonic from the onset. After several days of attendance, during which only the signs of general bronchitis are present, the physician, expecting defervescence, is surprised at his morning or evening visit to find a decided increase of the fever (103° to 105° F.) and bronchial breathing and bronchophony at the base of one of the lungs. The cough previously loose becomes dry, paroxysmal, hacking and painful; when expectoration is established, the sputa are nummulated, purulent and may be streaked with blood. Here an examination of the sputum will often reveal the lanceolated micrococcus; true pneumonia

has implanted itself on soil prepared by the influenza. It is needless to say that it is in the careless, the feeble and the aged that this complication or sequel of the influenza is generally seen. Naturally the supervention of pneumonia causes no little alarm, but, dangerous as it may be, a considerable proportion of cases so affected recover. After a stationary period of a few days, the area of consolidation steadily diminishes, and convalescence is established.

But in a certain percentage of patients the pneumonia is primary instead of secondary. This form differs somewhat from that of ordinary pneumonia, and from their experience during the present epidemic many practitioners in New England will recognize the description of "grippal pneumonia, *d'embée*," given by a foreign contemporary: "The initial chill is wanting; the pain in the side is generally of little intensity; the fine, dry crepitant of frank pneumonia is rarely heard, but instead the sub-crepitant rale; the souffle is less rude than in the common form; the sputa viscous and little, if at all, streaked with blood differ scarcely from those of simple bronchitis. In general, the dyspnoea is intense and out of proportion to the extent of the phlegmasia; the pulse is of average frequency, is soft and without resistance. Some patients are delirious and have subultus tendinum; all are prostrated as in grave fevers. These pneumonias often pass to suppuration and are complicated with albuminuria, with meningitis, with endocarditis. They may also terminate in gangrene."¹

In a patient that is old and cachectic, the pneumonic inflammation may not pass beyond the stage of intense congestion. The patient dies in a few hours asphyxiated and in cardiac astyole. Of course, when the heart is fatty or feeble from other causes, as uncompensated valvular disease, the probabilities of rather speedy death from congestion, capillary bronchitis, pneumonic consolidation, etc., are preponderant.

It is to be understood that in the present, as in previous epidemics, the majority of cases are hardly more serious than if a given number of persons were simultaneously afflicted with a severe cold; the prostration following these mild cases is however considerable.

Every physician in general practice has had a few cases in which the nervous symptoms predominated. There is a violent headache comparable to migraine; this is an early and obstinate symptom. The patients have a sensation of constriction in the forehead and temple, and they often refer their pains to the back part of the orbits. There are also severe pains in the back and limbs with fatigue, depression, restlessness and insomnia. The rachialgia and feebleness of the limbs, the shooting pains in the members and joints have been (plausibly) referred to a localization of the virus of influenza in the spinal medulla. Sometimes the multiple neuralgias and the excessive enfeeblement of the limbs attending the attack bear a marked resemblance to the so-called infectious polyneuritis, and it is a sufficient fact in this connection that certain authori-

¹ Ferdinand Widal.

ties (as Remak) have described a polyneuritis (quite typical) of "grippal" origin.

We believe that fewer cases of the gastro-intestinal form of influenza have occurred in this epidemic than in the previous epidemics, yet instances are sufficiently common where, along with predominant manifestations on the part of the respiratory or nervous symptoms, there has been marked disturbance of the digestive organs, as shown by furred tongue and anorexia, nausea, vomiting, pain or a sensation of weight and oppression in the stomach, constipation or diarrhoea, etc.

Pervading diseases (as cardiac, nephritic diseases, pulmonary tuberculosis) have been provoked to unwanted aggravation by the epidemic influenza, and the mortality from these diseases has been greatly enhanced.

There are already some indications that the epidemic is on the wane. The overworked members of the medical fraternity in all parts of the country will welcome some material lightening of their burdens. Not a few physicians have averaged from twenty-five to forty calls a day all through this busy season.

THE ANNUAL REPORT OF THE NEW YORK COUNTY VISITING COMMITTEE OF THE STATE CHARITIES' AID ASSOCIATION.

The Nineteenth Annual Report of the New York County Visiting Committee of the State Charities' Aid Association for Bellevue Hospital and the Public Institutions of the city, states that during the past year few changes were made in the institutions. Chief among them was the appointment of a trained supervising nurse for the Almshouse and Workhouse Female Hospitals, and the adoption of a system of probation for the nurses under her. It has thus become the acknowledged policy of the Department of Charities and Correction that all the sick under its charge should have trained care, although as yet the male patients fare less well in this respect than the women. Among the other improvements referred to are wards for women under arrest, nearly finished at Bellevue Hospital; the new pavilion for "waiting women," at the Maternity Hospital on Blackwell's Island, and the near completion of a new brick pavilion at the Female Insane Asylum.

During the winter and spring, Bellevue Hospital was overcrowded, and because of the large number of acute cases the work of the nurses was very heavy. The wards are declared to have been in very good order throughout the year, although those under the care of the Mills' Training-school for male nurses, were, as usual, not so neatly kept as those cared for by the female nurses. The food is said to have been good and abundant, and the laundry-work better done than formerly. Much complaint is made of the condition of the City Morgue, which is contiguous to Bellevue, and a removal is urged. The report of the alcoholic ward shows that the number of patients admitted during the year was 2,753 males, and 1,100

females, an increase of 96 in the number of women, and a decrease of 129 in the number of men. These wards were much crowded during the year, and all sorts of makeshifts were used to accommodate the patients.

In regard to the Bellevue Training-school for Nurses, the following statistics are given: During the year there were 1,375 applicants for admission to the school, from which the 30 who were admitted were carefully selected. A class of 20 graduated. There were 1,215 calls for nurses, 26 of them being to fill positions in hospitals. Of these, 12 of the most important were supplied; but only a very small proportion of the calls for private nursing could be filled from graduates of the school. The report closes with a number of recommendations, among the most important of which is one for better accommodation for the city's insane through the enlargement of the settlement at Islip and the erection of decent and substantial buildings in place of the wretched pavilions on Blackwell's Island.

THE DREXEL INSTITUTE.

The Drexel Institute was lately dedicated in Philadelphia. The buildings and grounds have cost half a million dollars, and it has an endowment producing an income of \$50,000 annually. There is the beginning of a library. These are the gifts of Mr. Anthony J. Drexel. In addition, Mr. G. W. Childs has presented a famous collection of rare prints, manuscripts, relics and autographs. There is a system of free scholarships, but admission, as a rule, is to be gained by a small fee.

The training to be given is designed to keep in mind practical results, and the diploma is expected to secure for the young man or young woman graduating, a remunerative position in the actual every-day work of the daily life of the busy world.

There is to be a course of study and practice in art; a scientific department, with laboratories; a department of mechanic arts; a technical department. The provision for all this is most generous, and the aims so admirable — although not unique — that they call forth the best wishes of those wishing well to humanity, wherever they may dwell.

We confess, however, as humanitarians and hygienists and as advocates of preventive medicine, our enthusiasm is most aroused by the announcement that there is to be a department of domestic economy, which will be thoroughly practical. It almost makes us wish that we had been born later and born in Philadelphia. If it fulfils its purposes there will be no longer any excuse for celibacy. The course will extend over two years, girls and young women will be taught cooking in a model kitchen, and meals will be spread in a model dining-room. Will they, upon graduation, refuse to cook except in model kitchens, or to spread meals except in model dining-rooms? Probably they will, but it will matter less, for, in ad-

dition, they *may* learn millinery, dress-making, the building, sanitation, decoration and management of the house, household economy, human physiology and hygiene, business forms and accounts, free-hand drawing and elementary economies.

Our heart goes out to this Institute and its founder, and especially to its department of domestic economy. To the graduates of this department we should like to extend freely the right of suffrage — with a proviso that their interests in domestic economy should not thereby be curtailed; and also the right hand of fellowship at the hymeneal altar.

MEDICAL NOTES.

THE DUKE OF CLARENCE. — It is reported that the Duke of Clarence, eldest son of the Prince of Wales, is seriously ill at Sandringham. He is suffering from a severe attack of influenza, complicated with pneumonia.

YELLOW FEVER. — Recent reports from Brazil indicate that the epidemic of yellow fever shows little or no signs of abating at Santos. At Rio Janeiro, the conditions are much better. Yellow fever is reported in the Island of Jamaica.

THE INFLUENZA, although disappearing in some localities which were early attacked, has recently broken out in a severe form in several cities and towns both in this country and in Europe. In some cases the localities now going through the height of the epidemic are in the vicinity of those which suffered severely some weeks ago.

THE INFLUENZA IN BERLIN. — At a meeting of the Berlin Society for Internal Medicine, held in December, the present epidemic was discussed. The first cases were observed early in November. Observations point to the probability that the disease clings to a locality without excluding the possibility of transmission from one person to another. The present epidemic was marked by severe complications, especially in those who were already suffering from organic lesions of the heart, lungs or kidneys, or who were over forty years of age. Recurrences in the same person are not frequent and are generally mild in their course.

THE AMERICAN JOURNAL OF OBSTETRICS. — Dr. Paul F. Mundé has retired from the editorial management of the journal, a position which he has occupied for eighteen years. It will hereafter be edited by Dr. Brooks H. Wells.

ANNALS OF OPHTHALMOLOGY AND OTOTOLOGY. — Under the above title a new quarterly journal appears this month for the first time. It will contain original articles and reviews of current literature connected with the title-subjects, and also with rhinology and laryngology. It is published in Kansas City, under the editorial management of Dr. James P. Parker.

THE MEDICAL SECRETARY OF PUBLIC HEALTH. — In accordance with a resolution passed by the American Medical Association at its last meeting, the committee appointed for the purpose have submitted a petition to Congress setting forth the usefulness of the medical profession and praying for the establishment of a Medical Secretary of Public Health, who shall be a cabinet officer, and whose department shall take charge of all matters connected with disease and preventive medicine.

THE MARINE-HOSPITAL SERVICE. — The President has nominated Dr. Walter W. Wyman supervising surgeon-general. Dr. Wyman had been temporarily appointed to this position during the recess of Congress. Dr. John B. Hamilton, formerly supervising surgeon-general, who resigned to accept a position in Rush Medical College, in Chicago, has been appointed surgeon.

THE HEALTH OF FLORENCE. — Sir Douglas Galton has just issued a report with regard to the sanitary condition of Florence. During the last year out of 185,000 inhabitants there were 137 deaths from typhoid. The death-rate of the city, which twenty years ago was 36 per thousand has been reduced to 25, which was last year's rate. He thinks that by a thorough revision of the drainage system, Florence can be made one of the most healthy cities of Europe.

Poisonous American Apples. — The *Horticultural Times* of London has demanded of the Board of Trade that the importation of American apples be forbidden, because apple trees in America are sprayed with Paris green, to protect the fruit against the codling moth. It has been shown, however, that but one pound of Paris green is used to one hundred and fifty gallons of water, and that the spraying is done while the apples are very small, and that the amount of poison which could possibly remain on ripe apples is practically nothing.

AMERICAN HOG PRODUCTS IN FRANCE. — According to the new Custom House Law, American ham and bacon can be imported into France through the ports of Dunkirk, Havre, Bordeaux and Marseilles, where consignments will be examined by experts whose services will be paid for by the importer. These experts are to be appointed by the Minister of Agriculture. No American meat will be allowed to pass the Custom House unless it has been examined and certified as sound by the inspectors in question.

THE DEPOPULATION OF FRANCE. — During the year 1890, there were 38,000 more deaths than births reported in France. This very large diminution was in part, due to the influenza. It has been computed that the time required to double the population, according to the rate of increase of the last year, is in England 53 years; in Germany 77 years; in Russia and Italy 99 years; in Austria 139 years; and in France 230 years. In France, not only are there fewer marriages, but the age at which marriages take place has advanced so that now the mean age for men is about thirty years

and for women twenty-five years. The average number of children is three.

PHYSICIANS FOR JEWISH COLONIES.—An advertisement appears in the German journals asking for volunteers among Jewish physicians to take charge of medical affairs in the Jewish colonies which have been established in South America. Applicants must sign a contract for three years' service, they must speak German and have had hospital experience. Those who can speak the Russian Polish dialect are preferred.

BOSTON AND NEW ENGLAND.

THE WILL OF DR. BUCKMINSTER BROWN.—By the will of the late Dr. Brown, Harvard College will ultimately receive \$40,000, to found a professorship of orthopedic surgery, to be called the "Dr. Buckminster Brown Professorship." The books of the testator, relating to orthopedic surgery are given to Harvard College, the remainder of his medical works are given to the Boston Medical Library Association.

MEICAL INSPECTION OF THE BOSTON PUBLIC SCHOOLS.—It was expected that the plan of the Board of Health, to establish medical inspection in the public schools, would go into effect the first of the year, but by a rule governing the use of the special appropriation of \$5,000 made for this purpose by the last Common Council, most of the money has already been used for other purposes, and it has been thought advisable to wait until the present city government makes a new appropriation before putting the plan into operation.

MORTALITY OF BOSTON FOR THE WEEK.—The total number of deaths last week was the highest since the week ending January 11, 1890, when the last influenza epidemic reached its height. The deaths reported as due to influenza last week were twelve uncomplicated, and 32 associated with other diseases. The deaths reported to the Board of Health for the week were 339, making the death-rate 38.2. Of this number the deaths from consumption were 39, pneumonia 79, heart-disease 30, bronchitis 38. The number who died over sixty years of age was 116.

DEATHS IN BOSTON IN 1891.—The total number of deaths in Boston last year was 10,571, against 10,181 in 1890. The annual death-rate was 23.02 per thousand, while in 1890 it was 22.70, and in 1889 it was 24. The percentage of deaths from zymotic diseases to total mortality of 1891 was 15.27, which is lower than ever before in the history of the Board of Health. Consumption caused 1,352 deaths last year, which is less by 143 than in 1890. Pneumonia 1,149, as against 1,093 in the preceding year. Bronchitis 551, as against 453 in 1890. This increase is largely due to the influenza in December. Cholera infantum caused 597 deaths in 1891, 498 in 1890. The deaths from diphtheria were 232, which is small in comparison with 401, the number in 1890. The months of July and December had a greater number of deaths than any of the other months of the year; the record for July being 1,005, and that for December 1,133.

THE DEATH-RATE OF LYNN.—During the last year, there were 965 deaths in Lynn, a death-rate of about sixteen and a half per thousand. This is the lowest rate recorded in the city for several years. During December seventeen deaths were reported as due to influenza.

MASSACHUSETTS LEGISLATURE.—The joint standing committees on drainage, charitable institutions and public health are as follows: *Drainage*—(Senate) Clark, Franklin; Drury, Middlesex; Eaton, Norfolk. (House) Lane, Boston; Low, Brockton; Fiske, Ashland; Hale, Framingham; Dodge, Natick; Dole, Newburyport; Breen, Boston; Quian, Boston. *Public Charitable Institutions*—(Senate) Meade, Essex; Reade, Suffolk; Nutter, Plymouth. (House) Blanchard, Boston; Sawyer, Danvers; Clark, Palmer; Bicknell, Plymouth; Savage, Lowell; Fletcher, Belmont; Gay, Northampton; Head, Pepperell. *Public Health*—(Senate) Nichols, Worcester; Merritt, Hampden. (House) Blodgett, West Brookfield; Chance, Boston; Carter, Williamsburg; Dodge, Natick; Larkin, Tolland; French, Gloucester; Casey, Boston.

TUBERCULOSIS OF CATTLE IN NEWSHAMPSHIRE.—The board of commissioners appointed by the last legislature to exterminate contagious and infectious diseases among cattle have made a report to the governor. They have condemned 111 animals infected with tuberculosis. In several instances the disease was traced to herds of cattle brought from Massachusetts. On January 12th the commissioners issued a circular to the boards of selectmen, as follows: "You are hereby notified that a cattle quarantine against the State of Massachusetts is this day ordered. You are directed to seize and hold in quarantine all cattle not intended for immediate slaughter coming into this State from Massachusetts after this date, and to notify this Board at once of such action. Cattle from Massachusetts intended for immediate slaughter will be subject to quarantine regulations if any contagious or infectious disease is found among them; otherwise they will be allowed to proceed to their destination. All other cattle brought into the State without a permit from this Board, must be held by you, as above directed, until this order is cancelled."

NEW YORK.

MORTALITY FOR THE WEEK.—The number of deaths reported in the city for the week ending January 2d, was 969, an increase of 80 over the previous week, and showing an annual death-rate of 26.63 per thousand of the estimated population. Of this number 86 were attributed to influenza and complications.

THE DOCTOR'S WEEEKLY.—A newspaper devoted to the interest of the medical profession, was started with the new year by Dr. Ferdinand King, recently editor of *The International Journal of Surgery*.

TUBERCULOCIDIN.—The first instalment of tuberculocidin, or Kleb's modified tuberculin, has been received at the St. Mark's Hospital.

BEQUESTS TO PUBLIC INSTITUTIONS.—By the will of Mrs. Mary Stuart, widow of the late Robert L. Stuart, several million dollars is given to religious and charitable institutions and societies. Among these are the New York Cancer Hospital, which gets \$25,000, the Presbyterian Hospital, the Northwestern Dispensary, the Home for Incurables, the New York Eye and Ear Hospital, the Woman's Hospital, the Manhattan Eye and Ear Hospital, and the Society for the Relief of the Ruptured and Crippled.

Miscellany.

VITAL STATISTICS OF NEW YORK CITY, 1891.

DURING the year just closed the total number of deaths reported to the New York Bureau of Vital Statistics was 43,634, showing an annual death-rate of 25.96 per thousand of the estimated population. In the year 1890 the number of deaths reported was 40,230, and the annual death-rate 24.66. The total number of births reported was 46,894, against 30,250 in 1890; this large increase being due to the fact that since last spring the Health Department has made special efforts to secure reports from physicians and midwives who were negligent in reporting births.

The comparative number of deaths from certain diseases in the two years is shown in the following table:

	1891.	1890.
Influenza	838	314
Pneumonia	5,817	5,611
Phthisis	5,160	5,023
Bronchitis	1,834	2,037
Bright's disease	2,503	2,420
Disease of the heart	2,287	1,982
Diarrheal diseases	3,585	3,349
Small-pox	2	2
Measles	664	726
Scarlet fever	1,221	466
Diphtheria	1,363	1,351
Whooping-cough	353	489
Cerebro-spinal meningitis	189	137
Typhoid fever	384	332

In the Bureau of Contagious Diseases there were reported 25,189 cases, which included nine of typhus fever, 1,329 of typhoid fever, 7,218 of scarlet fever, 11,863 of measles, 4,749 of diphtheria, and 21 of small-pox. The vaccinating corps made 109,213 vaccinations; of which 83,970 were revaccinations.

THERAPEUTIC NOTES.

ANTIDOTE FOR HYDROCYANIC ACID.¹—Professor Kober has proved experimentally that hydrogen peroxide is a valuable antidote for hydrocyanic acid poisoning. It is to be given internally as well as subcutaneously until the odor of the acid can no longer be recognized in the exhalations and the symptoms subside.

THE TOXICITY OF THE URINE.²—Prompted by the view that various toxic products are eliminated in the urine in acute infectious diseases, Semmola, before the Académie de Médecine, expressed the thought that, by

¹ Pharm. Central, 570.

² American Journal of Medical Science, December.

the injection of such urine in rabbits and guinea-pigs, the symptoms of the original disease would be reproduced. Such a procedure would constitute a valuable diagnostic aid. Thus, for instance, in a case of influenza-pneumonia, complicated by tetanic and eclamptic attacks, the injection of the urine should reproduce the symptoms in animals, and meningitis could be excluded.

RESORCIN IN LARYNGEAL PHTHISIS.³—Dr. Ty-mowsky considers resorcin the most convenient of all local applications, because it gives no pain, and need only be applied once a day. The solution must be of the strength of one hundred per cent. in cases of unhealthy-looking ulcers, which are undoubtedly of tuberculous character. At the same time inhalations of from two to five per cent. solution of resorcin may be substituted for those of cocaine.

Correspondence.

MEDICAL NOTES FROM JAPAN.

TOKYO, JAPAN, December 5, 1891.

MR. EDITOR:—Through the kindness of Professor Boditz, M.D., I visited the Imperial University Hospital. It is arranged in pavilions, with accommodations for two hundred patients of both sexes. A large number, are "tuberculous"—pulmonary, or otherwise.

Leprosy is not considered eminently contagious; and is not excluded from the general wards. I saw one case, of long standing, where the appearance was typical, but would scarcely attract attention on the street. It is observed here, that of late, tuberculous affections are less numerous while leprosy has increased. The apparent relation of these two diseases may be explained by their bacilli being similar, if not identical.⁴ A class of students were receiving clinical instruction at the hour of my visit, 9 A. M.

Dr. Ishiguro (surgeon-general of the army) very kindly gave me a card to Dr. Hori, surgeon in charge of the large hospital under direct control of the War Office. Several long, one-story buildings, each separate from the others, afford room for the reception of four hundred persons.

By courtesy of Dr. Adachi (senior surgeon of the army) and Dr. Nalecsihana (staff surgeon), I was enabled to see the Army Medical College (Gun-iakkō) and Museum, a new brick building. The college has, at present, forty officers, as students. Everything is well arranged, with a view to practical results. Appliances for microscopic and bacteriological work were in place. The museum contains a good collection, illustrative of various means for care of the sick in field and hospital—some from different foreign sources. Among the pathological specimens is the extensive exhibit of lesions of bones, from the last civil war. In the Imperial University, German is the foreign language used for medical instruction; law and chemistry are taught by means of French and English.

I am indebted to Dr. W. N. Whitney (official interpreter to the United States legation) for an opportunity to observe the work at the Akasaka Hospital (Ophthalmic) under his professional direction. The beginning of this charitable and educational enterprise was made in 1883 by Dr. Whitney and Dr. Yoshida (now of the Japanese navy). The building in use was opened for patients in 1886, Dr. Mitamura being superintendent. This institution is supported by voluntary donations, foreign and Japanese. During the past five years these have amounted to about five thousand dollars. The medical work has been conducted by three attending surgeons, one house-surgeon, one apothecary, one student and two nurses. From June 30, 1890 to

³ In the Hawaiian Islands lepers are promptly removed from the general community to an isolated locality.

⁴ Lancet, November 21st.

June 30, 1891, the number of in-patients treated was 210; number of days under treatment, 2,732; number of dispensary consultations, 4,952; number of days medicine given, 12,306. Most of those attending are among the poorer classes, yet over one-fourth the running expenses has been paid by the patients. Some come more than sixty miles for medical care. The present structure has space for forty beds. Further extension is needed to provide for holding the dispensary service separate from the wards.

There is much blindness, due largely to keratitis consequent upon "disease" and uncleanliness during infantile life and later years. Many cases are doubtless the result of exposure to sun, wind and dust which children undergo. Being fastened securely to the shoulders of a nurse, herself quite young, the little one often cries and kicks in vain, frequently falling asleep with the face toward the hot sun.

It is said here, that rice-eating nations are less affected with cataract than other peoples; also, that rickets and consequent deformities are common among the Chinese and Japanese.

Very truly yours.

F. B. STEPHENSON, Surgeon, U. S. N.

uncharitableness are wiped out, — and the world is moving toward that end, — we shall see for all men of whatever avocation, not slander and calumny, but honor and justice for good work done."

Very truly yours,
J. WARREN ACHORN, M.D.

ADDRESSES WANTED.

MASSACHUSETTS MEDICAL SOCIETY, TREASURER'S OFFICE,
NO. 430 WEST CHESTER PARK.

BOSTON, January 7, 1892.

MR. EDITOR: — If any of your readers can and will inform me of the present whereabouts of

Thomas Goff Simons, M.D. (Bellevue), 1876, who became a Fellow, September 20, 1887, at Springfield, then thirty-three years of age, or of

Theodore Everett, M.D. (Harv.), who became a Fellow, October 17, 1888, at Haverhill, then twenty-six years of age, I will be obliged.

Dr. Simons was a student at Montreal University, but not a graduate, was three years at Bellevue, and studied also with Dr. W. V. Wallace, of Providence, R. I. He practiced at Springfield, his last known address.

Dr. Everett was educated at Phillips Academy, Exeter, studied medicine with Dr. Allan Mott-Ring, of Arlington Heights, and at the New York University and Harvard Medical Schools. He practiced at Haverhill, and then at Cambridge, his last known address.

Yours very truly,
EDWARD JACOB FORSTER, Treasurer.

VINDICATION OF DR. STERLING POMEROY.

BOSTON, Boylston Street, January 7, 1891.

MR. EDITOR: — At a complimentary dinner given Dr. Sterling Pomeroy, January 6th, at the Hotel Thorndike, by his friends, which I had the pleasure of attending, I gave expression to a few thoughts for which I request publication in the JOURNAL.

Dr. Pomeroy, as you know, has just been exonerated in the Gleason divorce trial from any unprofessional conduct; and it is on account of his trying position that I have been led to express myself as I have here:

"When we are sick it is not the lawyer we are looking for; it is not the priest; but it is the best physician in the town we want; and we want him bad. And he comes, perhaps without his dinner, perhaps without his sleep; for he's everybody's servant, and his masters cannot wait. By means of his trained skill and strength of body and mind, he works a cure. And his patient praises, and pays him. And both are satisfied.

"Again he is summoned, and his professional skill and patience are taxed as never before. For weeks he works, and for poor pay, or goes unpaid. For it is a servant's business to come as he is bid. And again he is praised — proportionately, perhaps.

"There are times — and times — and times when he ought to be blessed; and there are times, I know, when it were better he were condemned.

"Now if it were disease alone — disease *per se* — that he were treating, he would succeed. We should all succeed, for I believe that every fever ill to which poor human flesh is prone will in time find its end in a specific cure. It is not the disease then, but it is that indefinable factor in human beings — spirituality *perverted* — to which the good name of men of our calling is often sacrificed.

"We have to treat bodies and minds. The bodies we can take care of; but the minds — expressing themselves in all sorts of jealousies, sentimentalities and hypochondriacal ways — no matter what precautions we take, we cannot at all times escape these. Neither can we escape the suspicions of those who give credence, or partial credence, to the first rumor — the world at large. It is only when the minds and morals of the people have been educated up to the level of the morality and mentality of the physician of to-day that we can escape the imputations cast upon us, and that we can do our greatest work.

"I would like to see my eighty-first grandfather back. Probably he lived in southwestern Asia, and spent his days among the trees. I wonder what his language was. A succession of growls? Ten generations ago he was a garrulous old Gaul, and had his den on the head-waters of the Rhine. When in the evolution of the race and the growth of spirituality, jealousy, envy, hatred and malice and all

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 26, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Saints' fever.	Typhoid fever.	Diphtheria and croup.
New York .	1,515,301	889	321	13.42	27.06	2.63	.44	7.37
Chicago .	1,069,850	549	225	20.34	17.64	1.51	9.62	4.68
Baltimore .	1,046,400	572	123	22.02	2.10	.36	.70	8.12
Bronx .	884,243	426	151	15.64	27.14	3.22	.46	.89
St. Louis .	453,770	—	—	—	—	—	—	—
Boston .	148,477	292	72	8.16	29.24	2.04	1.02	3.74
Cincinnati .	143,430	244	81	12.22	22.52	3.68	1.65	6.15
Pittsburg .	296,908	267	62	5.72	19.35	4.48	1.44	4.83
Baltimore .	142,300	54	32	49.31	19.35	1.62	1.29	19.86
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg .	240,000	101	44	33.00	15.00	5.60	5.60	18.50
Milwaukee .	220,392	111	30	13.65	21.75	—	2.61	6.35
Washington .	200,000	57	12	1.75	12.25	—	—	1.75
Charleston .	63,165	42	11	2.38	11.90	—	—	2.38
Portland .	36,425	10	0	—	35.00	—	—	—
Worcester .	84,625	48	15	6.24	35.36	—	4.35	—
Lowell .	77,696	33	14	5.72	17.47	—	2.86	—
Fair River .	74,000	31	14	45.16	22.54	—	—	—
Cambridge .	70,028	24	6	—	41.58	—	—	—
Lynn .	55,727	28	5	14.28	21.42	10.71	—	—
Lawrence .	44,654	47	11	8.52	46.34	2.13	—	—
Springfield .	44,179	32	19	6.06	1.51	—	—	—
New Bedford .	40,401	33	12	3.63	9.09	—	—	—
Quincy .	38,891	15	2	—	6.66	—	—	—
Chester .	27,909	15	5	20.00	26.66	—	—	20.00
Haverhill .	27,412	12	2	16.66	—	—	—	16.66
Fairston .	25,445	11	2	—	0.00	—	—	—
Wester .	24,624	11	2	—	26.00	—	—	—
Newton .	24,419	11	1	—	18.18	—	—	—
Malden .	22,031	13	—	15.38	30.76	—	—	15.38
Fitchburg .	22,023	9	4	11.11	11.11	—	—	11.11
Waltham .	18,707	9	3	—	11.11	—	—	—
Pittsfield .	17,281	4	1	25.00	—	—	—	25.00
Quincy .	16,272	4	1	14.29	14.28	—	14.28	—
Newburyport .	13,947	5	3	—	—	—	—	—
Medford .	11,079	3	0	—	33.33	—	—	—
Clinton .	10,424	—	—	—	—	—	—	—
Peabody .	10,193	8	2	12.50	50.00	—	—	—
	10,158	1	0	—	—	—	—	—

Deaths reported 4,200; under five years of age, 1,348; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhoeal diseases, whooping-cough, erysipelas and fevers) 559, acute lung diseases 873, consumption 386, diphtheria and croup 280, scarlet fever 89, typhoid fever 84, diarrhoeal diseases 41, whooping-cough 23, erysipelas 13, measles 12, cerebro-spinal meningitis 12, malarial fever 3.

From medical diseases New York 13, Chicago 12, Brooklyn 11, Philadelphia 3, Baltimore 2, Milwaukee, Worcester, Lowell, Lynn, Springfield, and Hyde Park 1 each. From whooping-cough Philadelphia 5, New York 4, Boston 3, Brooklyn and Milwaukee 2 each, Baltimore, Cleveland, Washington and Springfield 1 each. From erysipelas New York 6, Chicago 3, Philadelphia, Brooklyn, Boston, Baltimore, Cleveland and Washington 1 each. From measles Chicago and Brooklyn 4 each, New York and Milwaukee, 2 each. From cerebro-spinal meningitis Chicago 6, Washington 2, New York, Philadelphia, Brooklyn and New Bedford 1 each. From malarial fever New York 2, Cleveland 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending December 19th, the death-rate was 19.1, Deaths 1,340; acute diseases of the respiratory organs (London) 337, whooping-cough 122, measles 102, diphtheria 17, fever 46, diarrhoea 39.

The death-rates ranged from 10.8 in Nottingham to 32.8 in Newcastle-on-Tyne, Birmingham 16.5, Bradford 16.6, Hull 17.1, Leeds 20.1, Leicester 17.6, Liverpool 24.1, London 17.9, Manchester 21.6, Sheffield 21.5, Sunderland 30.6.

In Edinburgh 26.9, Glasgow 24.6, Dublin 33.9.

METEOROLOGICAL RECORD.

For the week ending December 26, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Date.	Baro-meter		Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches
	Daily mean.	Daily max.	Maximum.	Minimum.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Etc.	
S. 20	30.45	33	40	27	73	79	76	N.W.	N.	5	1	F.	0.
M. 21	30.42	39	44	35	79	100	90	N.W.	S.E.	2	9	G.	0.
T. 22	30.29	44	53	35	96	87	92	S.W.	S.	11	22	O.	0.
W. 23	30.01	58	64	52	94	81	88	S.W.	S.W.	12	27	R.	.42
T. 24	30.12	43	46	41	75	100	88	N.	N.E.	13	18	O.	.42
F. 25	30.17	41	41	39	94	94	94	N.	N.E.	15	2	R.	.42
S. 26	29.76	48	57	39	92	91	92	S.	S.W.	9	21	O.	.02
Mean		30.18	44	49	38	86	90	89		10	14		.47

* O, cloudy; C, clear; F, fair; G, fog; H, hazy S, smoky; R, rain; T, throst; E, snow; + indicates trace of rainfall. ~~Mean~~ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 2, 1892, TO JANUARY 9, 1892.

Leave of absence for one month on surgeon's certificate of disability is granted FIRST-LIEUT JAMES D. GLENNAN, assistant surgeon, U. S. A., with permission to go beyond the limits of the department.

Leave of absence on surgeon's certificate of disability granted CAPTAIN JEFFERSON R. KEAN, assistant surgeon, U. S. A., is extended three months on account of sickness.

MAJOR JULIUS H. PATAKI, surgeon, and CAPTAIN HENRY G. BURTON, assistant surgeon, having been found incapacitated for active service by the Army Retiring Boards, will proceed to their homes and on arrival there report by letter to the Adjutant General of the Army.

Leave of absence for six months with permission to go beyond the sea, to take effect on or about January 27, 1892, is granted MAJOR JAMES F. KIMBALL, surgeon, U. S. A.

MAJOR ALFRED A. WOODHULL, surgeon, U. S. A., having returned to the United States, is relieved from further duty and station at Fort Sherman, Idaho, and assigned to temporary duty in New York City.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 9, 1892.

M. R. PIOTT, assistant surgeon, from hospital, Mare Island, Col., and to the U. S. S. "Baltimore."

E. R. STILT, assistant surgeon, from U. S. S. "Baltimore" ordered home and two months' leave of absence granted.

M. S. GUEST, assistant surgeon, to the Navy Yard, Norfolk, Va.

C. H. WHITE, medical inspector, from the U. S. S. "Charleston," proceed home and granted two months' leave.

J. B. PARKER, surgeon, ordered to the U. S. S. "Charleston."

SOCIETY NOTICE.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—The Section for Clinical Medicine, Pathology and Hygiene, will meet at 19 Boylston Place, on Wednesday, January 20th, at 7.45 o'clock.

In Memoriam.—David Humphries Storer, George Hinckley Lyman.

Dr. Storer.—Dr. S. L. Abbott, Dr. G. J. Townsend, of Natick, Dr. O. W. Holmes, Dr. A. D. Sinclair, Dr. G. G. Tarbell, Dr. A. T. Cabot, and Dr. E. G. Cutler are expected to make a few remarks.

Dr. Lyman.—Dr. C. Ellery Stedman, of Dorchester, Dr. H. W. Williams, Dr. J. G. Blake, Dr. A. L. Mason, and Dr. George B. Shattuck will speak.

ALBERT N. BLODGETT, M.D., Sec'y, 390 Boylston St.

E. G. CUTLER, M.D., Chairman.

MASSACHUSETTS SCHOOL FOR THE FEEBLE-MINDED.

The Massachusetts School for the Feeble-Minded has been moved to Waltham, near the Clematis Brook Stations of the Fitchburg and the Massachusetts Central Division of the Boston and Lowell Railroads. The railroad fare is fifteen cents each way. The distance from Boston is eight miles. The post-office, telegraph and express address is Waverley, Mass. Packagings for the children should be addressed to the School at Waverley. Always put the child's name on the inside of the package. CLEMATIS BROOK is the nearest railroad station. Friends of the children may visit them any afternoon, holidays and Sundays excepted. All communications should be addressed to

WALTER E. FERNALD, M.D., Sup't, Waverley, Mass.

RECENT DEATHS.

EDWARD S. BERRY, M.D., of Concord, N. H., died recently, aged forty-seven.

JOSEPH HILTON, M.D., of New York, died January 7th, aged seventy-seven.

COLIN MACKENZIE, M.D., of New York, died January 6th, aged fifty-three. He served with distinction in the medical corps of the army during the war.

HORATIO S. HENDER, M.D., died in Lowell, N. Y., January 10th, aged sixty-two. He served in the war as surgeon of the one hundred and fifty-eighth New York regiment.

JOHN WOOD, F.R.S., F.R.C.S., Emeritus Professor of Surgery in Kings College, London, died December 29th, aged sixty-six.

W. H. LONG, M.D., surgeon in the Marine Hospital Service, died at Cincinnati, January 2d, aged forty-nine. He was appointed assistant surgeon in 1875, and surgeon in 1878. He has been in Cincinnati since 1888.

ERNEST WILHELM BRUCKE, Professor of Physiology and Microscopic Anatomy, in Vienna, died January 7th, aged seventy-two. He had been professor in Vienna since 1849. He was a member of the Academy of Sciences, and is the author of several works on different physiological subjects.

BOOKS AND PAMPHLETS RECEIVED.

The Technique of Cerebral Surgery. By G. Wiley Broome, M.D., St. Louis. Reprint. 1891.

Concealed Pregnancy: Its Relations to Abdominal Surgery. By Albert Vander Veer, M.D., Albany, N. Y. Reprint. 1889.

The Aseptic Closure of Long Standing Sinuses having their Origin in Tubercular Joints. By H. Augustus Wilson, M.D., Philadelphia.

Retro-peritoneal Tumors: Their Anatomical Relations, Pathology, Diagnosis and Treatment. With a Report of Cases. By Albert Vander Veer, M.D., Albany, N. Y. Reprint. 1892.

Report of a Case of Spina Bifida, with Partial Motor and Sensory Paralysis of both Extremities, Complete Paralysis of the Sphincters of the Bladder and Rectum, Double Equino-varus and Purulent Bursitis. By H. Augustus Wilson, M.D. Reprint. 1891.

Report on a Case of Haemophilia, or a Family of Bleeders. Tubercular Peritonitis. Report of Cases of Cholecystotomy, with Special Reference to the Treatment of Calculus Lodging in the Common Duct. By A. Vander Veer, M.D., Albany, N. Y. Reprints. 1891.

Original Articles.

THE SANITARY CONDITION OF BOSTON: A STATISTICAL PAPER.¹

BY J. H. MCCOLLON, M.D.

THE remark is frequently made that the death-rate of Boston is exceptionally high; much higher than that of some of the principal cities in this country and in Europe. To show that this statement, while correct so far as the rate from certain diseases is concerned, is incorrect when the general death-rate is taken into consideration, is the object of this paper. The general death-rate of a city is not always a perfectly reliable indication of its sanitary condition because, as the population is either increasing or diminishing, the ratio of deaths may be very much over-estimated or under-estimated. The most satisfactory plan for obtaining correct information on this point is to find the percentage of deaths from any one disease or from any class of diseases to the total mortality. For the purpose of comparison the following five cities have been selected: New York, Philadelphia, Glasgow, Edinburgh and Berlin.

The death-rate in Boston, per one thousand was 22.70, for 1890. The rate for the preceding year was 24.42, and the average rate for the past ten years has been 23.47. The highest death-rate reached in this city in the past twenty-five years was in 1872, during the small-pox epidemic when the proportion was 31.80; in 1873 the rate was nearly as high being 30.27. In New York City the rate for 1890 was 24.58; in 1872, the year of the small-pox epidemic, it was 33.70. For the last ten years the ratio has ranged from 30.99 to 24.58, with an average of 26.56. In Philadelphia the rate for 1890 was 20.76. In 1872 it was 26.19. For the last ten years, ending with 1890, the average has been 21.43. Glasgow has had for the same period, an average rate of 25.21. The rate for 1890 is 25.20. It is worthy of note that in Glasgow the average rate for ten years, and the rate for 1890, are practically the same. Edinburgh has an average for the decade commencing in 1881 of 19.40. The rate for 1890 is 20.00. In Berlin the rate for 1890 is 21.51. The average rate for the last ten years, 1881 to 1890 inclusive, is 24.37. In 1872, the year of the small-pox epidemic, the rate was 31.00; in 1875, when there was no general epidemic, the rate was 32.92; in 1883, the rate was 28.86. Boston during these three years had respectively a rate of 31.80; 24.95, and 22.76.

So far as the death-rate from all causes for the decade ending with 1890 is concerned, the six cities just mentioned should be placed in the following order: Edinburgh, with an average rate of 19.17, stands at the head of the list, having the lowest ratio; then comes Philadelphia, with a rate of 21.43; then Boston, 24.47; then Berlin, 24.52; next Glasgow, 25.21, and last New York, 26.50. If the rate for 1890 alone is taken, the order would be; Edinburgh, 20.00; Philadelphia, 20.76; Berlin, 21.51; Boston, 22.70; New York, 24.58; and Glasgow, 25.20. The epidemic of influenza, which had a very considerable effect on the death-rate from pulmonary diseases is one cause of the comparatively high death-rate of Boston and New York in 1890. The effect of this

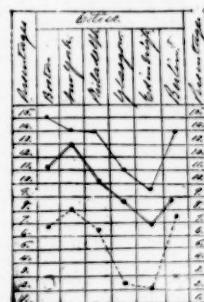
epidemic was felt in Europe in 1889. The estimated death-rate in Boston for 1891 is 21.28.

The average density of population does not have such a direct influence on the general death-rate of a city as has been supposed, although its effect on the number of deaths from special diseases is often very marked. The reason of this is evident; certain districts in a city are crowded, while others are sparsely settled. In no city is this condition more apparent than in Boston; for instance, Ward 16 with a population of 184 to the acre as compared with Ward 23 with only three to the acre. In support of this statement it is worthy of notice that Edinburgh with a death-rate of 20 to the thousand, has an average population of 101 to the acre, while Glasgow, with a rate of 25.20, has 87; that Berlin, with a rate of 21.51, has 110, while Philadelphia, with a rate of 20.76, has only 13 to the acre. If Boston, with a rate of 22.70 and a population of 20 to the acre, is compared with New York with a rate of 24.58 and a population of 111 to the acre, it will be seen that, although the rate is higher and the population larger in the latter city than in the former, the increase in the death-rate bears no direct relation to the increase in the density of the population.

CHART A.

PERCENTAGE OF DEATHS FROM CONSUMPTION, DIARRHEAL DISEASES AND PNEUMONIA TO THE TOTAL MORTALITY IN BOSTON, NEW YORK, PHILADELPHIA, GLASGOW, EDINBURGH AND BERLIN, 1890.

Consumption = — Pneumonia = — Diarrheal disease =



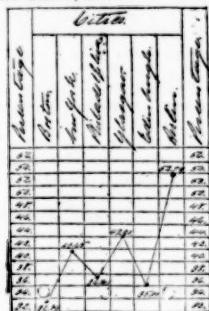
The most important factors in causing the comparatively high death-rate of Boston are consumption, diarrheal diseases and pneumonia. The percentage of deaths from these three causes to the total mortality during 1890, in the six cities just mentioned, is as follows: Boston, 31.93, the highest; Berlin, 29.19; New York, 26.92; Philadelphia, 23.88; Glasgow, 20.72; and Edinburgh, 17.14. If these three diseases are taken separately, it is evident from a study of Chart A, which shows the percentage of deaths from these three causes to the total mortality, that, by following the full line, which indicates the percentage of deaths from consumption, Boston has the highest rate, 14.68; New York comes next, 13.69; Philadelphia, 13.46; Berlin, 13.23; Glasgow, 10.42; and Edinburgh, 9.00. By following the double line, which indicates the percentage of deaths from pneumonia to the total mortality, it will be seen that the order is somewhat changed, New York having the highest rate, 12.44; then Boston, 10.72; Philadelphia, 9.81; Berlin, 8.34;

¹ Read before the Boston Society for Medical Improvement, November 23, 1891.

Glasgow, 8.25; and Edinburgh having the lowest, 6.30. It is interesting to note the course of the broken line, which shows the percentage of deaths from diarrhoeal diseases. New York has the highest rate, 7.84; then Berlin, Boston and Philadelphia with percentages of 6.99, 6.53, and 6.04. Glasgow and Edinburgh have nearly the same percentage; 2.05 in the former and 1.94 in the latter city.

CHART B.

PERCENTAGE OF DEATHS UNDER FIVE YEARS TO THE TOTAL MORTALITY IN BOSTON, NEW YORK, PHILADELPHIA, GLASGOW, EDINBURGH AND BERLIN, 1890.



The percentage of deaths of children under five years of age to the total mortality, is always an important factor in causing a high death-rate of a city. Sudden changes of temperature, crowding in tenement-houses, improper food, want of cleanliness, and a general neglect of sanitary measures are the chief agents in increasing this mortality. The subject of infant-feeding is such a vast one that it is entirely beyond the scope of this paper; but, as bearing on this matter, the statement in the *Statistisches Jahrbuch der Stadt Berlin*, for 1888, that the ratio of deaths in the first year of life, to the thousand, was 44.11 in children fed on animal milk, while it was only 7.90 in nursing children, is of interest. The effect of a high temperature on the mortality of children fed on animal milk as compared with nursing infants, is very marked. During the summer of 1888 in Berlin, the death-rate per thousand of the former was 28.43, for the other nine months of the year it was 15.68; the rates of the latter for the corresponding seasons were 4.06 and 3.84. Chart B indicates the percentage of deaths of children under five years of age to the total mortality for 1890, in the cities taken for comparison. It will be seen at a glance that Boston has the lowest rate, 32.89; that Edinburgh comes next, 35.00; then Philadelphia, 36.41; New York, 40.65; Glasgow, 43.20; and Berlin, 52.79. The density of population seems to have some slight influence on these percentages; for with the exception of Philadelphia, which should have a lower rate, and Edinburgh, which should have a higher, an increase in the density coincides, to a certain extent, with an increase in the percentage. This rate has gradually diminished in Boston since 1875, when it was 43.84. The average for the last five years is 34.86. The percentage for the first nine months of the present year, 1891, is 35.77.

The percentage of deaths from zymotic diseases to the total mortality shows a very decided decrease in

this city, having fallen in the past ten years from 26.87 to 16.47, a diminution of 10.40. The percentage for 1890 is 16.47, and the rate for the first nine months of the present year, 1891, is 16.10.

TABLE C.

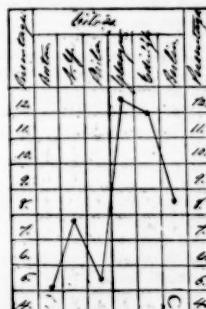
PERCENTAGE OF DEATHS FROM TEN PRINCIPAL CAUSES TO THE TOTAL MORTALITY IN BOSTON, NEW YORK, PHILADELPHIA, GLASGOW, EDINBURGH AND BERLIN, 1890.

Causes.	Boston.	N. Y.	Phila.	Glas.	Edin.	Berlin.
Bronchitis	4.50	4.95	2.55	11.86	16.65	.25
Consumption	14.68	13.69	15.46	10.42	9.00	13.23
Croup	.60	1.30	2.02	.53	.65	.28
Diarrhoeal diseases	6.53	8.34	6.64	2.05	1.94	6.39
Diphtheria	3.91	3.15	2.57	1.05	1.59	4.47
Measles	.19	1.82	.51	4.76	4.38	.99
Pneumonia	10.72	12.44	9.81	8.25	6.30	9.34
Scarlet fever	.41	1.02	.92	.96	.90	.89
Typhoid fever	1.52	.88	3.24	.88	.89	.43
Whooping-cough	.38	1.21	.99	5.22	4.54	1.76
Total	43.47	48.80	42.11	45.98	40.24	37.63

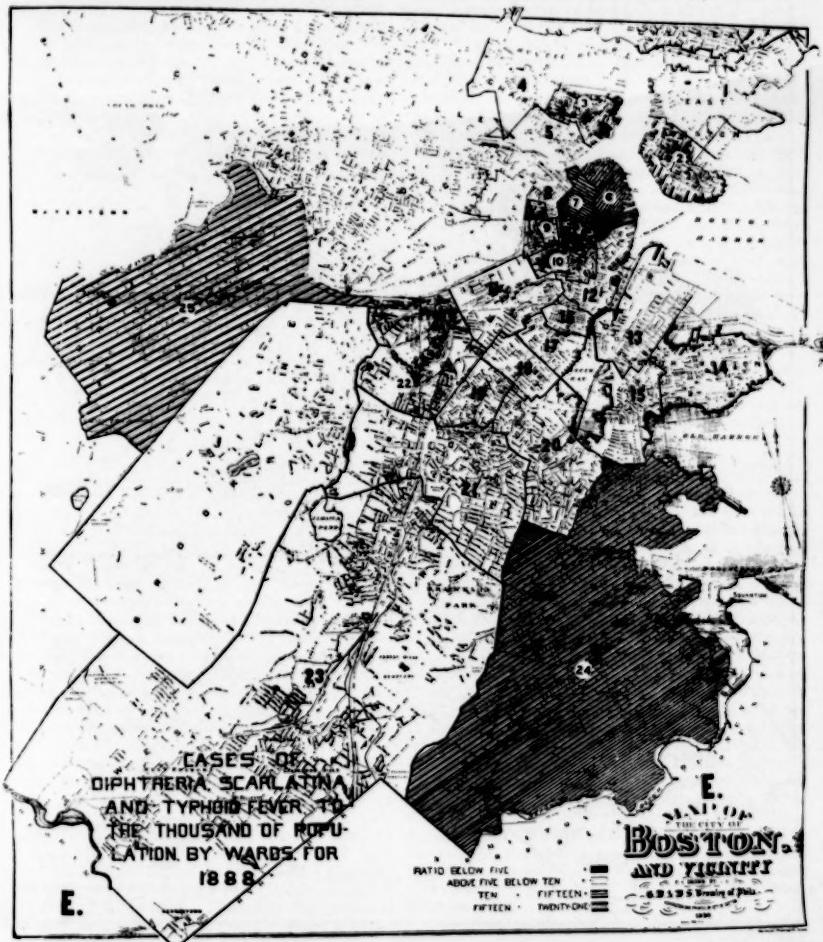
As the same nomenclature is not in use in different cities, a comparison of the relative mortality from zymotic diseases, taken together, cannot be made. Table C, however, gives the percentage of deaths from ten principal causes to the total mortality in six cities. It is evident from it that, during 1890, bronchitis was a very prominent factor in increasing the death-rate of

CHART D.

PERCENTAGE OF DEATHS FROM DIPHTHERIA, MEASLES, PERTUSIS AND SCARLATINA TO THE TOTAL MORTALITY IN BOSTON, NEW YORK, PHILADELPHIA, GLASGOW, EDINBURGH AND BERLIN, 1890.



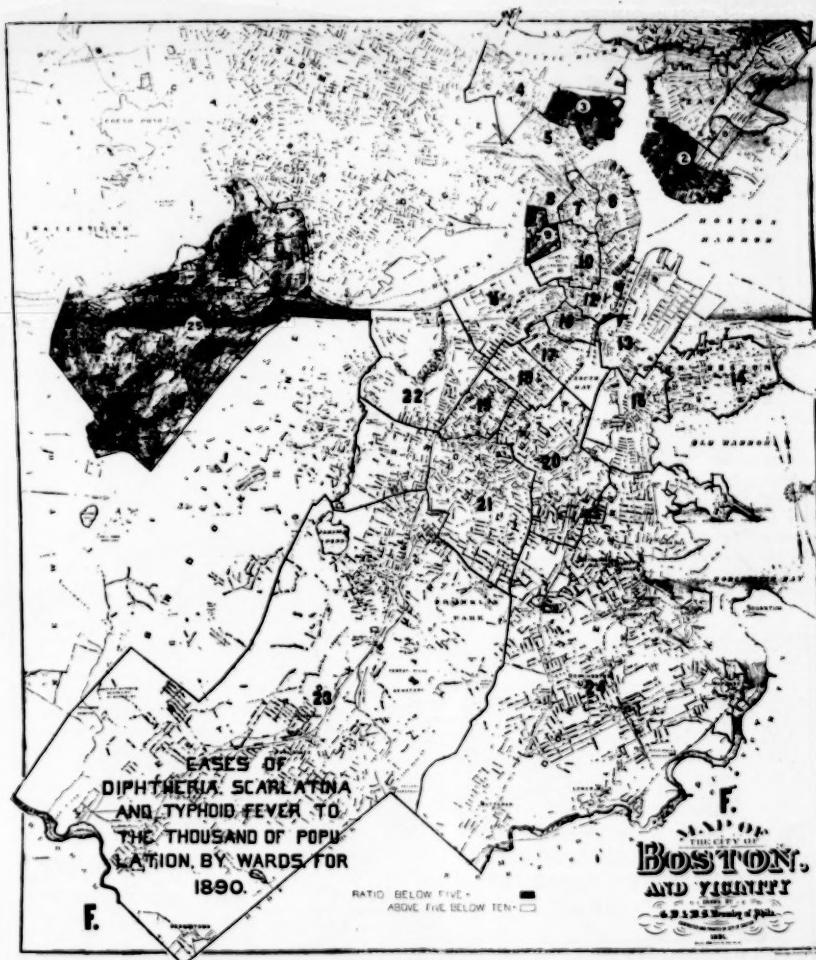
Glasgow and Edinburgh, while it had a comparatively slight effect on the rate of Boston and New York, and still less on that of Philadelphia and Berlin; that, except in New York and Philadelphia, croup does not have any great influence on the death-rate; that typhoid fever is twice as prevalent in Philadelphia as in Boston, more than three times as prevalent in New York, Glasgow and Edinburgh, and more than seven times as prevalent as in Berlin. It is an interesting fact that when croup and diphtheria are taken together there is a difference, in the relative frequency of these diseases, of only a quarter of one per cent.



between Boston, New York, Philadelphia and Berlin. The percentage of deaths from consumption, diarrhoeal diseases and pneumonia has already been shown in Chart A. If these ten principal causes are taken together the percentage to the total mortality is, in New York, 48.80; in Glasgow, 45.98; in Boston, 43.47; in Philadelphia, 42.11; in Edinburgh, 40.24; and in Berlin, 37.63. If the excess of the percentage of deaths from consumption and pneumonia in Boston is eliminated, it will be found that Boston has a lower rate than Philadelphia and Edinburgh, and a slightly higher rate than Berlin.

Chart D indicates the percentage of deaths from

pertussis, diphtheria, scarlet fever and measles to the total mortality in the cities before mentioned. It can be seen at a glance that Boston has the lowest percentage, 4.92; then Philadelphia, 4.99; New York, 7.20; Berlin, 8.11; Edinburgh, 11.41; and Glasgow, the highest, 11.99. The percentage of Boston is due principally to diphtheria; that of New York to diphtheria, measles and scarlet fever; that of Philadelphia to diphtheria; that of Glasgow and Edinburgh to measles and whooping-cough; and that of Berlin to diphtheria and whooping-cough. It is an interesting fact as bearing on the fatality from certain diseases in different countries, that the percentage of deaths



from measles and whooping-cough in Glasgow and Edinburgh is three times as great as that of the other cities. In Boston, since the year 1887, the percentage of deaths from diphtheria and scarlet fever to the total mortality, has diminished from 5.07 to 4.35. The percentage for the first nine months of this year, 1891, is 1.94. During the last five years the percentage of deaths from measles and whooping-cough has fallen from 2.62 to .57. These diseases have not been a very important factor in the death-rate of Boston for the past ten years; the highest percentage from measles having been 1.56; and that from whooping-cough 1.88. Of the preventable diseases, diphtheria, scarlet fever and typhoid fever are the most prominent

agents in increasing the death-rate of Boston. Map E represents, in a general way, the ratio of cases of diphtheria, scarlet fever and typhoid fever to the thousand of population in the different wards of the city for 1888.

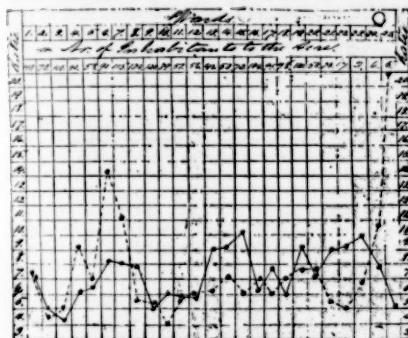
Map F shows the ratio of cases of these diseases to the thousand, by wards, in 1890. On these maps the wards, in which the ratio is below five to the thousand, have a dark shade; when the rate is above five and below ten, the wards are white; when the ratio is above ten and below fifteen the wards in which this ratio occurs are indicated by wide black lines alternating with narrow black ones; wide black lines alternating with two hair lines indicate a ratio above

fifteen. If these maps are compared it will be seen that on the one for 1888 five wards have a rate below five to the thousand, sixteen wards have a rate above five and below ten, three have a rate above ten and below fifteen, and one has a rate above fifteen; that on the map for 1890, four wards have a rate below five, and in the remaining twenty-one the rate does not exceed ten.

CHART G.

RATIO OF CASES OF DIPHTHERIA, SCARLATINA AND TYPHOID FEVER TO THE THOUSAND OF POPULATION, BY WARDS, IN BOSTON FOR 1888 AND 1890, WITH THE NUMBER OF INHABITANTS TO THE ACRE IN 1890.

1888 = 1890 =



A somewhat more accurate idea of the relative frequency of diphtheria, scarlatina and typhoid fever in the different wards for 1888 and 1890 may be gained from Chart G, which shows the ratio of these diseases to the thousand with the number of inhabitants to the acre in each ward in 1890. The basis for the calculation of the ratio of 1888 was obtained by multiplying the number of assessed polls by 3.45; that for 1890 was the last United States census. The acreage of each ward was furnished by the City Surveyor, and is approximately correct. The broken line indicates the ratio for 1888; the full line that for 1890. The rate for 1888 in Ward 1, with an average population of 49 to the acre, was 6.91; that for 1890 was 6.46. In Ward 2, with a population of 70 to the acre, the rate for 1888 was 3.90; that for 1890 was 4.68. Ward 3 has a population of 40 to the acre. The ratio in 1888 was 4.69; in 1890, 3.74. The population of Ward 4 is 42 to the acre. The ratios for 1888 and 1890 are 8.89 and 5.68, respectively. Ward 5, with a population of 58 to the acre had, in 1888, a rate of 6.42; in 1890 the rate was 5.96. It is of interest to notice that, in the five wards just mentioned, comprising East Boston and Charlestown, the ratio is lower in the poorer localities than it is in the better. This condition is due to the fact that a greater proportion of the patients are sent to the hospital from the former localities than from the latter, thus removing many sources of contagion.

Ward 6, with a population of 90 to the acre, the rate in 1888 was 13.78; in 1890, 7.86, a diminution of 5.92. In Ward 7, which has a population of 115 to the acre, the rate in 1888 was 10.77; in 1890, 7.68, a marked diminution. In Ward 8, the average population is 184 to the acre. The rate in this ward for

1888 was 5.20; that for 1890 was 7.44, an increase of 2.24. The population of Ward 9 is 120 to the acre. The rate for 1888 was 4.82; that for 1890 was 4.66. Ward 10, which has a population of only 39 to the acre, had a ratio of 3.76 in 1888; the rate in 1890 was 5.48, a slight increase. The population of Ward 11 is 51 to the acre. The rate for 1888 was 5.34; that for 1890 was 5.44. The population of Ward 12 is 56 to the acre. The rate in 1888 was 5.52; in 1890, it was 5.32. Ward 16 is the most thickly settled district in the city, having a population of 184 to the acre. The rate in this ward, for 1888, was 6.46; for 1890, 5.70. The number of inhabitants to the acre in Ward 17 is 95. The ratio for 1888 was 6.54; that for 1890 was 7.16, a slight increase. Ward 18 has a population of 78 to the acre. The ratio for 1888 was 6.64; the rate for 1890, 5.55, slight diminution.

In the city proper, embracing the ten wards just mentioned, the most marked diminution in the number of cases occurred in Wards 6 and 7. In Wards 18, 14 and 15, comprising South Boston, with a population, to the acre, of 42, 53 and 72, respectively, there was a considerable increase in the frequency of these diseases in 1890 as compared with 1888. The rate for the former year was 8.53, 8.83, 9.80, respectively; that of the latter 5.93, 6.70 and 5.80. In Wards 19, 20, 21 and 22 with a population, to the acre, of 100, 50, 30 and 17, respectively, the ratio for 1888 was 7.16, 7.11, 5.06 and 4.51; that for 1890 was 8.86, 6.90, 8.41 and 8.74, respectively. In the four wards just mentioned, which practically embrace the district known as Roxbury, there was an increase in the frequency of these diseases in 1890 as compared with 1888. In Ward 23, or West Roxbury, with a population of three to the acre, the rate in 1888 was 6.21; in 1890, 9.24. Ward 24, or Dorchester, has a population of six to the acre. The rate in this district was 10.01 for 1888; that for 1890 was 7.32, a marked diminution. Brighton, Ward 25, with a population of five to the acre, had, in 1888, the remarkable rate of 20.31; in 1890, the rate was 4.82, a decrease of 15.49. In the whole city the ratios for diphtheria, scarlatina and typhoid fever taken separately were, in 1888, 3.32, 1.66, 2.17; in 1890, 2.29, 2.06 and 1.89, respectively. The ratio of these diseases to the thousand, taken together, in the whole city, was, in 1888, 7.15; in 1890, 6.24. It may be of interest to note the ratio of these diseases in the different sections of the city for 1890: Brighton has the lowest rate, 4.82; Charlestown, 5.11; East Boston, 5.63; Boston proper, 6.26; Dorchester, 7.32; Roxbury, 8.19; South Boston, 8.99; and West Roxbury, 9.24.

Chart H shows the ratio of cases of typhoid fever to the thousand of population by wards in 1890. The wards in which the ratio was above one and one-half to the thousand were 1, 2, 4, 5, 6, 9, 10, 11, 12, 13, 14, 16, 17, 19, 20, 22 and 23; those in which the ratio was below one and one-half were 3, 7, 8, 15, 18, 21, 24 and 25. It is worthy of notice that the rate in Ward 6 is 2.81, while that of Ward 7 is only 1.21; that the rate of Ward 16 is comparatively low, while that of 17, the adjoining ward, is comparatively high. The rate of 2.64 in Ward 23 with a population of only three to the acre may be explained by the existence, in this locality, of a number of wells. An infected well is one of the most potent factors in the causation of this disease; it is, in fact, a culture tube on a large scale.

It is an interesting fact, bearing on the subject of a public water-supply as compared with wells, that in Charlestown, in which the Mystic water is used, the rate is not particularly high, in the poorer localities, where the residents remain at home during the whole year, while in those districts where the inhabitants leave the city during the summer months the rate is considerably increased. This statement is also true, with certain limitations, of the other parts of the city.

CHART H.

RATIO OF CASES OF TYPHOID FEVER TO THE THOUSAND OF POPULATION, BY WARDS, IN BOSTON FOR 1890, WITH THE NUMBER OF INHABITANTS TO THE ACRE.

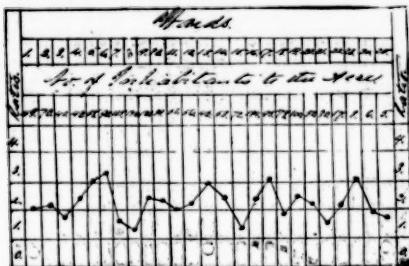


Table I gives the ratio of cases of typhoid fever to the thousand of population in the different wards of the city for 1890, and is explanatory of Chart H.

TABLE I.

RATIO OF CASES OF TYPHOID FEVER TO THE THOUSAND OF POPULATION, BY WARDS.

Ward 1, East Boston	1.68	Ward 14, South Boston	2.12
" 2, "	1.79	" 15, " . . . . .	.94
" 3, Charlestown	1.37	" 16, Boston	1.93
" 4, "	1.94	" 17, "	2.68
" 5, "	2.41	" 18, "	1.37
" 6, Boston	2.81	" 19, Roxbury	2.08
" 7, "	1.21	" 20, "	1.84
" 8, " . . . . .	.92	" 21, "	1.04
" 9, "	2.05	" 22, "	1.69
" 10, "	1.95	" 23, West Roxbury	2.64
" 11, "	1.47	" 24, Dorchester	1.41
" 12, "	1.82	" 25, Brighton	1.32

The percentage of deaths from diphtheria, scarlatina and typhoid fever to the total mortality for the nine months ending with September 30th of the present year, 1891, is 3.15; that for the corresponding nine months of 1890, was 5.89, a diminution of 2.74. The number of reported cases of these diseases for the same period in 1891 is 1,942, as compared with 2,483 in 1890, a decrease of 541 in the number of cases.

It has been shown from this collection of statistics:

- (1) That the general death-rate of Boston is not exceptionally high.
- (2) That the excess of the death-rate in Boston, over the five cities taken for comparison, is due to consumption and pneumonia.
- (3) That the percentage of deaths of children under five years of age to the total mortality is lower in Boston than in any other of these five cities.
- (4) That the percentage of deaths from diphtheria, measles, pertussis and scarlet fever to the total mortality is also lower in Boston than in any of these cities.
- (5) That, in this city, during the past two years, there has been a marked diminution in the number of cases of diphtheria and scarlet fever.

THE TREATMENT OF CHRONIC SPRAINS OF THE FINGER-JOINTS.¹

BY ROBERT W. LOVETT, M.D., OF BOSTON.

I FEEL that I owe the Society an apology for presenting a paper upon so trivial a subject; but the affection in question is a common one, and one which is exceedingly intractable and troublesome, and I have not been able to find any satisfactory mention of its character or treatment in the text-books. It is not uncommon in surgical practice, and in the last two years a fairly large number of cases have come under my observation in private and in hospital practice. It seemed to me that it might be of practical interest to mention the peculiarities of the affection and to cite one or two individual cases, at the same time speaking of a plan of treatment which is not by any means new, I fancy, but which has proved successful in the largest proportion of the cases which have come under my observation.

The greater proportion of cases among those that I have seen have occurred in women, although men have by no means been exempt; and in both men and women neurasthenic symptoms have in many cases been associated with the local symptoms of synovitis. In the greater majority of cases the finger synovitis was due to some injury, such as a strain or hyperextension of the joint; but in several instances the patient could assign no cause for the synovitis, although it is likely that in these there was some overuse of the affected finger or some unconscious traumatism.

The joints most often affected have been the phalangeal articulations, and on examination they have been seen to be enlarged, and most often shiny. Sensitiveness is very marked, especially over the lateral ligaments, and local heat is a common symptom. Motion is very much restricted, or complete stiffness of the affected joint may be present, and attempted manipulation is very painful. Generally the sprained joint is held in a position of partial flexion, and any attempt to extend it is very distressing. In severe cases the whole finger may be swollen.

The pain and sensitiveness in general are more than would be expected from the local symptoms. The swelling may often be considerable, and fluctuation may be present, due to the synovial distension; but these are not necessarily the most painful cases. In other cases, with comparatively little enlargement of the joint, much sensitiveness may be present, and the pain may be severe enough to keep the patient awake at night. It is this disproportion of pain and local symptoms which makes this especial affection noteworthy, and distinguishes it in a measure from other sprains.

The association of neurasthenic symptoms with such finger sprains seems common enough to suggest that in many cases they are intimately associated pathologically. In these cases it is easy enough to account for the excess of pain, but this will not explain all instances where the sensitiveness seems excessive. The symptoms of which I speak are excessive nervousness, persistent basal headaches, tingling of the hands and feet, sensitive spots over the spine, and the like. I cannot state definitely in what proportion of cases these have occurred, but I am sure that some of them have been present in more than half of the cases that I have seen.

¹ Read before the Boston Society for Medical Improvement, November 23, 1891.

Most of the cases have been of some weeks' or some months' standing when they were seen. The affection seemed at first so trivial that it appeared to the patients not worth attending to, and it was only when it became apparent that it was not wearing off, but was getting progressively worse, that they applied for treatment.

The affection seems to show little or no tendency toward spontaneous improvement: in fact, the disposition seems to be to an increase of pain and sensitiveness over what followed the injury, and simple therapeutic measures seem of no avail.

One or two specimen cases may be of interest.

Miss A., forty years old, an artist, consulted the writer in the spring of 1889, with regard to a chronic sprain of the large phalangeal joint of the left middle finger. Six weeks previously she had wrenching the finger in opening a bureau drawer, and it had been lame for some time, and for three or four weeks it had been getting progressively worse. When seen by the writer the joint was swollen, hot and tender; no motion was allowed, and at night the finger was very painful. The patient was very nervous, and said that the previous spring she had had nervous prostration. For two weeks the finger was kept upon a splint and painted daily with iodine. This produced a very slight improvement, but not much. The splint was then removed for a few minutes at night and the finger soaked in hot water. This was followed by massage; and after a treatment extending over some six weeks, the usefulness of the finger was practically restored. The recovery has been permanent.

Jennie P., a mill hand, twenty-one years old, apparently well, although nervous, applied for treatment at the City Hospital in August, for a synovitis of the metacarpal-phalangeal joint of the thumb. It had been injured in November, eight months previously, and in May, six months after injury, it had become so bad that she gave up work and tried various remedies. At the time when she was seen the joint was swollen and very sensitive to pressure and manipulation. The thumb was immobilized for a month without any apparent effect and then the splint was gradually discontinued and massage begun, and in a month or six weeks more the use of the thumb was fully restored.

These cases will serve to recall the kind of case of which I speak, and to call attention to the extreme slowness of the recovery even under the most favorable conditions.

There is but little to be said with regard to the pathology of the affection, at first it appears to be a simple acute synovitis due to injury, but it soon assumes the type of a chronic synovitis and probably passes on into an arthritis in severe cases. That is, the bone becomes affected as well as the synovial membrane, causing thickening and distortion of the affected joint. It would seem that in cases where the stiffness had been of some months' standing, adhesions would have formed which would lead to obliteration of the joint, but even in such obstinate cases as the one last related, the restoration of perfect mobility seems possible in a large proportion of cases.

Rheumatism and rheumatoid arthritis undoubtedly have a part in keeping up certain cases of chronic finger sprains, but beyond this it is not possible to speak definitely of the etiology. Certain cases of spontaneous synovitis of the finger-joints clearly belong to this class.

The treatment which after much experimentation has seemed to be the best, is complete immobilization of the affected joint for a period of two to four weeks, followed by a gradual discontinuance of the splint and the use of massage and hot water.

In general the tin finger-splint has been used and the affected joint freely painted with iodine during the time of its immobility. In private practice it has been more comfortable to apply the copper-wire splint, which is done by winding the finger in sheet wadding and then winding a spiral of thin copper wire about it with one or two lengths running from the tip to the base of the finger. This gives complete and comfortable immobility, but requires constant adjustment and is liable to interfere with the circulation. After the finger has been immobilized for such time as seems best according to the severity of the case, the use of hot-water soaking is begun along with massage every second day. Gradually the splint is discontinued without much regard to the pain caused, and the patient encouraged to use the finger.

Two points have appeared to the writer to be established: one is that simple fixation, however prolonged, is not enough to cure the affection, and secondly, experience in the more severe cases has shown that the immediate use of massage is not tolerated. Consequently a period of immobilization must be insisted upon which at the time seems to be accomplishing very little, but which probably is an essential part of the treatment. And at the close of this period of fixation there is often but little improvement to be noted, and pain on movement seems perhaps as severe as in the first place. But this must be disregarded and massage begun.

Salicylate of soda three times a day, or oftener, in ten-grain doses, has formed part of the writer's treatment because in some cases there was evidently a rheumatic element, and because in the majority of cases it was found to control the pain and seemed to hasten the convalescence. The general condition often needs attention.

Once more may I call your attention to the fact that this affection does not tend towards spontaneous recovery, that its progress is in any event lamentably slow, and that it is often associated with neurasthenia.

A CASE OF BILIARY CALCULUS; CHOLECYSTOTOMY; DUODENAL FISTULA; RECOVERY.¹

BY J. F. A. ADAMS, M.D., PITTSFIELD, MASS.

MR. B., aged thirty-eight, married, manufacturer, residing at Bridgeport, Conn., consulted me November 22, 1890, and gave the following history:

For ten years past he has suffered from attacks of severe abdominal pain, at intervals varying from two or three weeks to two or three months. The first of these attacks was followed by local peritonitis, since which he has had four other attacks of peritonitis following the pain, which has always been in the region of the gall-bladder.

Two years ago, after an unusually severe attack, he had jaundice for the first time, accompanied with nausea and itching. In three or four weeks the skin resumed

¹ Read at the quarterly meeting of the Berkshire District Medical Society, July 29, 1891.

its normal color. Since then the attacks of pain have not usually been followed by jaundice.

In August, 1890, while in England on business, he had a severe attack of pain, followed by local peritonitis, but not by jaundice, except a slight yellow tinge of the conjunctiva. He returned home immediately after and suffered on the voyage from constant pain and tenderness. After reaching home he was confined to his bed for ten days with a temperature of 101° to 103° . Since that time the attacks of pain have increased in severity, and have occurred about once in two weeks, relieved only by hypodermic injections of morphia. Jaundice also appeared in September, and has since been persistent and very deep in color. Since jaundice appeared each attack has been accompanied with nausea, which had not previously occurred.

There has been constant tenderness over the gall-bladder since the attack in August, and the stools have been white or light clay-colored, as they have always been for a few days after an attack of pain. The urine has been coffee-colored. The patient has lost fifty pounds in weight during the last three months. He is naturally a robust, vigorous, cheerful man. He is now thin, yellow and feeble, with a haggard and dejected expression.

At this time I gave him some general advice, and advised an operation.

The patient came to see me again the last of December. He had had an attack of pain December 17th, since when the jaundice was diminished and he had felt generally better.

On December 30th I went with him to see Dr. William W. Seymour, of Troy, who had himself submitted to the operation of cholecystotomy in December, 1889, at the hands of Mr. Lawson Tait, and had reported his case in very attractive style in the *Medical Record* for December 6, 1890. Dr. Seymour gave us a detailed account of his former sufferings, of the operation, and of the completeness of the cure; showed us his cicatrix and phial containing his one hundred and fourteen calculi. We saw in him a big, active, athletic man, a monument to the success of cholecystotomy. Mr. B. was very favorably impressed, and made up his mind that he would submit to the same operation if the attacks continued. But as he then thought himself much better, he preferred to wait a little.

The next day, December 31st, while on his way to Bridgeport, he had one of his severest attacks, and during the next three weeks he had one severe attack and three milder ones.

On January 24th he came to Pittsfield by way of Boston. Just before leaving Boston pain came on again and caused him intense suffering during the journey. There was no hypodermic syringe at hand, and he felt only slight relief from the inhalation of chloroform. Soon after his arrival he was relieved by morphia, but the pain returned and continued for more than twenty-four hours, requiring morphia again on the following day. On that day the temperature was normal and pulse 80° to 100° . There was tenderness over the region of the gall-bladder and pain there, and also below the right scapula. No increased dulness or other indication of a distended gall-bladder, and no enlargement of the liver; urine very dark brown; skin deeply jaundiced.

On the third day the pain was less, but the temperature rose to 101.5° , and pulse to 108° . On the fourth day, a sharp attack of pain came on with nausea and

vomiting. He was again relieved by morphia. After this there was no more severe pain, but tenderness was great for three days longer. During the week he had taken almost no food, and for a week after he took only liquid food in small quantities.

The patient was now told that surgical interference could no longer be deferred with safety, and readily consented to the operation. It was decided that this should be performed by Dr. William T. Bull, of New York, at the House of Mercy, in Pittsfield, on the 15th of February.

On the morning of the 13th he took a dose of Carlbad salts which caused two dejections, soon after which he was again seized with pain which lasted all day, with excessive tenderness and vomiting. The next day he was free from pain, but had slight tenderness and occasional nausea. Pulse and temperature normal.

On Sunday morning, February 15th, he went to the House of Mercy, where cholecystotomy was performed by Dr. Bull, who has kindly furnished me the following description of the operation:

"A four-inch vertical incision over the cartilage of the ninth rib exposed the abdominal cavity. The gall-bladder was not prominent, but was easily brought into view by wedging the adjacent intestine out of the way with flat sponges. It appeared to be constricted about its middle. The fundus was aspirated and two drachms of bile removed. It was then opened, the wound held apart with artery clamps; a soft bougie and also a probe was passed through the constricted body, and was arrested by a calculus which could be distinctly felt with the finger. It could be moved to and fro, a distance of two inches, apparently in the dilated cystic and common duct. The structure was overhung by the duodenum, and united to it by such firm adhesions that I could not separate them without fear of tearing the wall of the intestine. In consequence of this adhesion, the finger felt the calculus through the wall of the duodenum, when it was pushed in the lowest position it would occupy. When it was forced into its highest position it was close against the under surface of the liver, and the part of the duct it occupied appeared to be free from the duodenum. It was difficult in the field of operation to determine the precise limits of the duodenal wall. In making the incision to remove the calculus the wall of the gut was incised for a distance of half an inch where it lay over the duct. The wound was closed with a continuous catgut suture through the mucous coat, and outside this interrupted Lembert sutures.

"The incision in the wall of the duct was left open, a rubber drain inserted in it, and the edges of the incised gall-bladder sutured with catgut to the parietal peritoneum. The viscera was not long enough to permit the skin to be included in this suture. The drain was surrounded with tampons of iodoform gauze and the abdominal wound closed by silk sutures about them and the tube."

Duration of operation two and one-half hours, chloroform was the anesthetic.

The calculus was oval, of the size and shape of a nutmeg, and weighed 55 grains. Its longer diameter is $1\frac{1}{8}$ inch and its shorter diameter $\frac{3}{8}$ inch.

This operation was beset with unusual difficulties, for the following reasons:

(1) The gall-bladder was hidden behind the intestines and liver, and when found was contracted and contained no calculus.

(2) The calculus was in the dilated duct, was hidden behind the duodenum, and united by firm adhesions to the surrounding structures.

(3) The operation was protracted by the necessity of sewing up the incised duodenum.

(4) Owing to the deep position of the gall-bladder and duct and to the adhesions which held it there, the incised edges could not be accurately stitched to the abdominal wall, as is usually done, and the danger of the escape of bile into the peritoneal cavity was great.

After the operation the patient was greatly prostrated. In the evening he had a pulse of 108, temperature 98° and respiration 36. For four days following, the pulse, which was feeble, ranged from 120 to 150. Temperature 100.4° the second day, and 100.2° the third day, after which it was nearly normal. On the second day the urine contained albumen one-tenth of its volume, but this disappeared on the third day and did not return. He suffered from severe pain in the wound and whole of right side, and required hypodermic injections of morphine during the first few days. For forty-eight hours he took nothing by the mouth. On the third day he took champagne and on the fourth day he began to take peptonized milk. From the first he had enemas of peptonized milk, afterwards alternated with beef-juice.

The bile was discharged very copiously. For three days it was very watery and pale, being mixed with serum. After this it was thicker and bright yellow. The dressings were changed at first twice a day, but it was soon necessary to change them every eight hours and afterwards more frequently, sometimes every two hours. Great masses of absorbent cotton were completely saturated, as well as the bandage, clothing and bedding. This inflamed and excoriated the skin and caused great suffering. It caused him such pain to be moved that the dressing became a very difficult matter. The bile escaped around the tampon and not through the tube.

On the eighth day the sutures were removed. The wound had then healed, except where kept open by the tampons. The bile flowed chiefly from the lower angle of the wound and not through the tube. It was yellow and green, with much watery fluid, and the skin was inflamed wherever touched by the wet dressings and clothing.

With the discharge appeared a few white specks which, on examination, proved to be milk-curd. It was therefore evident that the wound in the duodenum was not united, and that its contents were escaping.

The three tampons surrounding the tube were removed on the eleventh, twelfth and thirteenth day. A cavity was then left, two inches in diameter and two inches deep, lined with healthy granulations. The tube was removed and found to penetrate one inch deeper than the bottom of this cavity. The tube was not obstructed. It was cleansed and replaced and surrounded with tampons. The bile, however, continued to flow out around the tube until March 7th, the twenty-first day, when additional fenestrae were cut close to the inner end of the tube and the cavity was packed very tightly with gauze. After this the discharge came chiefly through the tube.

The discharge from the duodenal fistula continued till March 14th, four weeks after the operation. For one week longer, bubbles of gas escaped during the dressing, and after this the fistula remained closed.

As long as nothing but milk and liquids were taken by the mouth, the discharge from the fistula was very

watery. It was at first acid in reaction, but afterwards neutral; but it was excessively irritating, and excoriated the whole side and back. It never contained more than a few small particles of curd, though very large quantities of milk were taken. The caseous mass passed onward through the duodenum, while the watery portion poured freely out from the fistula. When solid food was taken the discharge from the fistula was genuine chyme.

When the tampons were removed, as they were daily, the cavity surrounding the tube would immediately fill with half an ounce or more of bile and food. The bile came from the right side of the tube, and the food from the small orifice at its left side. As soon as this was withdrawn by a syringe it would well up again from the bottom. The amount of bile was amazing, but it could not be measured.

The wound granulated rapidly, and on March 26th, five and a half weeks after the operation, had closed firmly about the drainage-tube. This was then removed and a smaller one substituted, which was kept in for two weeks longer. On April 4th, seven weeks after the operation, the discharge of bile ceased for a time, and bile was then first seen in the stools. Bile was occasionally discharged from the tube, however, until April 18th, after which no more was seen. This was nine weeks after the operation. When the flow of bile was first checked, pains would be felt like the premonitory pains of his former colics. When bile reappeared at the wound, the pain ceased. A slight serum oozing continued till May 13th, since when there has been no discharge of any kind.

The stick of nitrate of silver was occasionally used to facilitate the closure of the sinus. The granulating surface was liberally dusted over daily with aristol, which acted admirably. For the protection of the skin, ointments were at first used, such as lanoline and zinc ointment; but the dry application of bismuth was found more comforting and healing. Tampons of wool were found better than cotton or gauze, as by their elasticity they kept the bile out of the wound and forced it to flow through the tube.

The bowels were at first obstinately constipated. Repeated enemas were given, as well as salines by the mouth; but nothing came away except the débris of the nutrient enema until the twelfth day, after which the stools were liquid and dark-colored until the twenty-first day, when the first milk-curd appeared in the stools. These were colored till the twenty-sixth day, after which they were nearly white in color and very copious till the forty-ninth day, when the normal color returned. There was therefore no movement from the upper portion of the bowels for three weeks, owing in part, no doubt, to the escape of the liquid portion of the food, as well as to the morphia which had to be given to a greater or less extent during that period.

No periodicity could be discovered in the discharge of bile; but the duodenal discharge varied with the feeding. It was constant as long as liquid food was taken at short intervals; but when regular meals were taken, it came in floods about an hour after meals.

For the first two weeks the patient was unable to turn himself in bed. At the end of four weeks he sat up in bed, and at the end of six weeks was walking about the hospital. He became greatly emaciated during the first four weeks, while the duodenal fistula was open, but began to gain flesh as soon as this was closed.

The jaundice began to fade immediately after the operation, and at the end of six weeks had all disappeared except a slight yellow tinge upon the abdomen.

I went out of town on the 1st of April, six and a half weeks after the operation. He was then wearing the small tube, but was up and dressed. Dr. F. K. Paddock took charge of him during my absence. On my return on the 13th of May, Mr. B. met me at the station, looking well and very happy. Since then he has been well, though not very strong. He has had regular bilious stools, no pain, no jaundice and has gained flesh.

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**A CASE OF TOTAL OBLITERATION OF THE
ESOPHAGUS THROUGHOUT THE GREATER
PART OF ITS COURSE, OF DOUBTFUL
ORIGIN; EXTERNAL ESOPHAGOTOMY AND
ATTEMPTS AT DILATATION; DEATH.¹**

BY MAURICE H. RICHARDSON, M.D.,
Surgeon to the Massachusetts General Hospital.

G. C., three years of age, was sent to me at the Massachusetts General Hospital by Dr. George H. Francis, of Brookline, on July 1, 1891.

Family history good. The child was perfectly well until last January, when he began to have difficulty in swallowing food. At first solids, and then liquids, were with difficulty kept down. He could swallow liquids, but they were immediately regurgitated. At other times he could swallow and keep them down. This state of things has continued to the present time. One day nourishment will not be retained at all, and the next day perhaps several quarts of milk will be swallowed and kept down. The child is emaciated and restless, otherwise not remarkable. At this time there was no history given of any possible local cause, such as the accidental swallowing of any burning or other irritating fluid.

On the 21st of July, having been under observation three weeks and no material change having taken place, he was discharged on account of an outbreak of scarlet fever in the ward.

On the 27th of July, 1891, he was re-admitted. Since leaving the hospital the little boy has not been able to swallow anything. Re-enters very emaciated and with a feeble and rapid pulse. Put at once on nutrient enema and inunctions of cod-liver oil.

On the 29th, under ether anesthesia, an incision was made in front of the sterno-mastoid muscle on the left side, and the osophagus was quickly exposed just below the level of the thyroid cartilage. At this point it was normal in appearance and in calibre. The sides of the incision were grasped with retractors, and the canal exposed down to the level of the sterno-clavicular articulation, where a firm, fibrous stricture was encountered. It was impossible to find an opening into this stricture with the smallest urethral instrument. At one time it seemed as if a passage had been found, and through this was passed a filiform bougie. The opening was gradually dilated until it would admit the end of a small gum-elastic catheter. After very careful manipulation, the instrument was passed into what was thought to be the stomach. It was noticed immediately that air entered and was expelled from the mouth of the catheter with the movements of respiration.

It seemed probable that this was air passing to and from the stomach. After very careful observation of this unexpected phenomenon, a small quantity of milk and brandy was injected through the catheter into what was supposed to be the stomach. The child did not rally well after the operation, and died that same afternoon.

At the autopsy it was found that the esophagus had become entirely obliterated, from the level of the sterno-clavicular articulation to the cardiac orifice. It was impossible to pass any instrument whatever through the canal. The catheter had made a false passage to the right into the pleural cavity into which the milk and brandy had been injected.

This very unusual case presents certain features of great interest. It did not seem to me possible that this could be a congenital stricture of the esophagus, because the onset had been quite sudden, and there had been no history of difficulty in deglutition up to the third year of the child's life. I therefore, some time before the operation, investigated the possibility of the closure being due to some corrosive action. I made careful inquiries, but was unable to find any ground for the belief that the child had swallowed anything injurious. Nevertheless, I did find that the first attack came on suddenly.

The operation demonstrated clearly the feasibility, in children, of exposing esophageal strictures situated five inches below the level of the incisor teeth. The upper end of the stricture was brought into view with the greatest ease. It was possible to hold back the sides of the osophagus and to search for the upper orifice without any difficulty whatever. In spite of all the care that I could use in the passage of bougies and in the introduction of the catheter, the false passage was made. It would be impossible to use any force whatever in dilating a supposed stricture without the greatest danger of making a false passage. Unless the eye of the surgeon is upon the point of the instrument so as to guide it with absolute knowledge, the slightest force is sufficient to cause a lateral deviation into the pleura or into the posterior mediastinum. I was not conscious at any time of using any but the very gentlest manipulation.

In a case of this kind there is little to regret in the fatal termination. The only other course would have been a gastrostomy. I think no one would advocate such an operation in a child of three. Life, certainly, would not be worth living were it necessary always to employ this means of feeding.

I would advocate the use of external esophagotomy for the relief of annular strictures situated within reach of the finger after an opening has been made through the neck. It is quite possible, as I have already shown, to reach with the finger as far as the arch of the aorta. I do not believe that it is justifiable to attempt any radical dilatation of benign strictures situated within reach of the finger, without first exposing the parts by the external incision. No degree of force sufficient to dilate thoroughly a stricture can safely be used through the mouth. In the case of this child, had I found a narrow stricture, I should have been tempted to excise the ring and unite the ends of the tube in a manner similar to that used in circumferential enterorrhaphy.

One other point to be noted is the importance of operating early. I have no doubt that in this case the chances of recovery were greatly diminished by the

¹ Read before the Boston Society for Medical Improvement, November 23, 1891.

four weeks' delay which I employed in studying out the case. During that time the child failed very much indeed. Although I do not believe that it was possible for this child to recover under any circumstances, yet had the conditions been otherwise, I am confident the delay would have had an unfavorable influence on the result.

Clinical Department.

A CASE OF HYDROPHOBIA.¹

BY GARDNER C. PIERCE, M.D., OF ASHLAND, MASS.

ABOUT seven o'clock on the morning of July 14, 1891, three children living in the south part of the town of Ashland, Mass., were savagely bitten by a Scotch collie dog weighing about sixty pounds, who seemed to be "running amuck" in attempting to bite every one he met in his pathway. He evidently was the same dog that bit a man in South Framingham about five o'clock on the same morning. Counting each tusk hole and each tusk laceration a bite, we found that Lizzie, aged eleven, was bitten in three places; Mollie, aged seven, was bitten in twenty-one places; and the little brother Myron, aged five, was bitten in nineteen places. Of these three children Lizzie, the oldest, presented only two bites on the left arm above the elbow, and one bite on her left cheek. Mollie, who was used the worst, presented severe wounds and lacerations on both legs below the knees; for she and her little brother were barefooted when attacked. The boy Myron also had very ugly wounds on his legs and left arm. On these two younger children about half of the bites consisted of a tusk hole from one-third to two-thirds of an inch deep, and the other marks of violence were deep tears or lacerations anywhere from one inch to two inches long. Some of these fissures were so deep that the flesh rolled out, presenting ragged, ugly, gaping wounds.

The patients were seen by the writer about thirty minutes after the attack of the dog. The wounds were cauterized with a thirty-three per cent. solution of carbolic acid. The father was advised to take these children to the Pasteur Institute in New York for treatment, immediately; for the dog was presumed to be rabid. The most certain way of ascertaining whether or no the dog was rabid, would naturally have been to have caught and placed him in confinement. But he was in altogether too dangerous a condition to allow of this. He evidently was laboring under an extreme degree of delirious excitement, and was ready, and even eager, to attack and bite every living thing that came in his way. After his attack on the children he made a fierce onset upon a teamster in the yard of the Adams farm, whereupon he was beaten to death with clubs by the attendants about the place. The animal was buried without the writer having an opportunity of seeing the body. But those who did see it, said he was quite thin of flesh. They opened his stomach, and found in it a dozen or more gravel-stones about the size of cherry pits, perhaps two tablespoonfuls of road-dirt, some grass, and some pieces of biscuit. Before he was killed he was frothing, they said, at the mouth and "furiously excited." All these circumstances seemed to indicate that the animal, without doubt, was rabid.

Just forty-eight hours after these children were bitten, they had reached New York, and had taken their first inoculation at the Pasteur Institute. The special methods in this treatment are well understood by us all, and need not be described here. These children were treated by what we would understand as the *simple* Pasteur inoculative method. The inoculations or injections were practised once each day. The term of treatment continued eighteen days. During the treatment the patients had no particular symptoms of any kind. On Saturday morning July 31, the children received their last and eighteenth inoculation, and the same day started for and reached home at eleven o'clock at night.

On the Tuesday morning following (August 4th.) Lizzie, the oldest girl, was taken ill with nausea and vomiting, and was quite feverish and restless. Her nausea and vomiting continued until the next day, when she began to improve, and by the night of August 5th was well again. She had no physician to attend her. What was the nature of her indisposition, cannot be known. Whether a recently inoculated person can present incipient symptoms of the rabid state soon recovered from, is not now exactly known; but it is something to be looked for in future observations.

The next day after Lizzie recovered, Thursday afternoon, August 6th, and five days after he had taken his last inoculation at the Pasteur Institute, Myron, the little five-years-old victim, was also taken sick. His first symptoms were moderate feverishness, nausea and vomiting. There was a slight degree of headache in his demeanor. Friday, the next day, the nausea and vomiting continued. He was chilly and feverish by turns. His face was alternately flushed and pale. A physician thus far had not been called to him, for the parents supposed he was probably sick like his sister, and would soon be well again. But Saturday morning, as he appeared much worse, the writer was summoned, when he noted the following symptoms: Temperature 100°, pulse 105. The pupil of the left eye was considerably dilated. There was a constant twitching at the angles of the mouth, and a slight jerking of the fingers of both hands from a spasmodic action of the muscles of the forearms. The tongue was slightly coated. He did not complain of headache. To a close observer a slight, but somewhat peculiar staring expression was noticeable in his eyes. His countenance for the most part was pale. By Saturday afternoon he was delirious at times, but in the intervals was quite rational. The stomach at this time could not retain much food or drink. He had much difficulty in swallowing liquids, yet could force some down after much effort. His eyes were sometimes bright and glistening, and at other times they appeared dull and expressionless.

On Sunday morning the patient was much worse in every way. All of the symptoms had increased in intensity. The temperature, however, was only 100.5°, but the pulse was 130 per minute. The skin would be flushed for eight or ten minutes, and then for about the same length of time be quite pale. An eruption appeared on the front part of the body, and on the left cheek, — more marked in these localities, but also faintly to be seen on the back and other parts of the body. It had somewhat the appearance of urticaria, but the patches were larger. Some were crescentic in shape, others were oval, while others were of irregular outline. For a few minutes — perhaps ten or

¹ Read before the Framingham Medical Society, November 3, 1891.

fifteen — they could be seen in full figure, plain and distinct ; and then they would disappear entirely, leaving the skin pale and somewhat dusky for about the same length of time, and then reappear, and so on repeatedly until the time of his death. The pupil of the left eye still continued dilated. During the intervals while the child was rational, his eyes and entire physiognomy wore a peculiar apathetic, mingled with a surprised and dumfounded expression difficult to describe and never to be observed in any other disease. At other times he was very delirious. He was exceedingly restless and wanted to be moved from one bed to another, and from one room to another frequently. His skin was exceedingly hyperesthetic, and to be fanned was unbearable. Any breeze or gust of wind blowing on to the bare skin would cause him to make complaints.

During the thirty-six hours preceding death he grew emaciated to a marked degree. Sunday, as the day advanced, the difficulty in swallowing increased. He was very thirsty ; and, craving water, would seize a cupful with great eagerness ; but the attempt to drink was invariably prevented by severe spasms in the throat. So he became hydrophobic, not because he did not want water, but because he did not dare to try to drink it. Another symptom noticed was a peculiar sound occasionally coming from his throat of a croaking character almost like a prolonged hiccup. It undoubtedly was produced by a synchronous spasm of both glottis and diaphragm.

Throughout the day, on Sunday, a thick viscid phlegm or saliva was continually collecting in the mouth and throat, and frequently had to be removed so the patient might breathe. As night approached, this secretion increased rapidly in quantity. About sunset a frothiness was continually appearing from the corners of the mouth and had to be wiped away almost continually. It was not noticed that his legs were paralyzed, as they sometimes are in the last stages of this disease. By seven o'clock P. M. he was weakening rapidly, and his throat filled with its secretions in such quantity, that it seemed impossible to keep this passage clear. He was continually delirious from eight o'clock until ten, when he passed into a comatose state. The twisting of his mouth and hands increased. He had no general convulsions, as is sometimes the case in this disease, but undoubtedly would have had, if he had lived a day longer. The patient died at quarter-past eleven Sunday night, partly from exhaustion, but more especially from asphyxia caused by spasm and the viscid secretions in the throat.

In the clinical history of this case the two most noteworthy symptoms were the hydrophobia and the aerophobia. These two characters are competent to prove in this patient's sickness, without the shadow of a doubt, the diagnosis of hydrophobia. Dr. James Boynton, of South Framingham, was called in to see the patient Sunday afternoon, and agreed that the case was one of hydrophobia.

The question now arises among the laity of this neighborhood, and very reasonably among physicians also, what cause, in this particular case, produced the hydrophobia, — the bite of the dog or the Pasteur treatment.

No physicians hereabout claim to be experts in rabies lore ; but, if Pasteur had been here, he perhaps would have inoculated rabbits in the usual way with the virus taken from the medulla or spinal cord of this child,

and then if they developed rabies after a period of incubation of *seven* days, it would have proved that the treatment caused the boy's death ; but if the disease supervened after an incubation of *fifteen* days, it would have shown that the *dog-bite* killed him. The trouble hanging about this attempt to prove causes, involves the fallacy, that in coming to the crucial, practical test, Pasteur substitutes a *boy* for a *rabbit* ; and, as a result, the incubatory conditions may be much changed by having the virus pass through the human subject.² So the above test is not conclusive or satisfactory.

With the existing limitations to our knowledge in this direction, for the present, our decision as to the safety and advantages of the Pasteur treatment must rest on the results given by thoroughly tabulated and well attested statistics. Statistics seem to prove that the death-rate under Pasteur's treatment is a little less than one per cent. ; while the mortality in people bitten by rabid animals and not inoculated, amounts to fifteen per cent. at least.³ The above statistics were made by a physician in Paris, who is not in any way connected with the Pasteur Institute. Other investigators have given non-treated cases a much higher mortality rate.

Now, if the Pasteur treatment is liable to produce rabies, then this fifteen per cent. of deaths among non-treated cases inevitably will be increased by the alleged dangers of the treatment *itself* ; so that the statistics would, under this supposition, show a larger percentage of deaths *under* treatment, than it would *without it* ; which is, we well know, not the case. Furthermore, it is claimed, that nearly all the physicians and attendants connected with the Pasteur Institute in Paris have been inoculated, and none of them ever suffered any harm from the procedure.

The all important question arises : What will you do, if there is brought to you a person, who has just been bitten by a rabid animal ? The writer of this paper would send him to the Pasteur Institute immediately. But in the face of this assertion, at a medical meeting held somewhere here in New England, there was put to vote this question : Will you send your cases bitten by rabid dogs to the Pasteur Institute for treatment ? A very few physicians voted "Yes" ; a very few voted "No" ; and quite a majority did not vote at all. The result of this vote shows that this question is far from being settled in the minds of our medical men even at the present time, and is still a subject worthy of much further consideration.

EXTRA-UTERINE PREGNANCY; CELIOTOMY; RECOVERY.

BY F. W. JOHNSON, M.D.,
Visiting Gynecologist, Carney Hospital; Visiting Gynecologist, St. Elizabeth's Hospital.

G. F., married, aged twenty-eight, consulted me, Tuesday, September 29, 1891. A diagnosis of extra-uterine pregnancy was made, and I operated on her the next day at the Carney Hospital. The following is the history of the case and the result of the examination :

Dysmenorrhœa since puberty. The pain, situated in front and low down in the abdomen, comes on several days before the flow and lasts throughout menstruation. For the past year has had quite severe pain in

² Boston Medical and Surgical Journal, April 1, 1886, p. 299.

³ Braithwaite's Retrospect, page 20, January, 1890.

the right ovarian region when unwell. Flows five days. Flows quite freely. Leucorrhœa for years. Always been regular to the day until August 9th. Instead of menstruating at this time, she went to August 16th, just one week over her time. August 16th flowing begun and continued, at times profusely, for two weeks. In two weeks the flowing again began, and has continued up to the present time. Since August 16th, when the flowing began, until September 20th has had a dull pain in right ovarian region. The breasts have enlarged. Sunday, September 20th, was suddenly seized with severe cutting pain in right ovarian region. This pain lasted one hour, and produced fainting. This severe pain was repeated September 28th, and lasted two hours. Formerly the pain in the right ovarian region was dull in character, but since the severe attack of pain it has been more cutting in character. From August 9th to August 16th, the week following the date of expected menstruation, there was dull, heavy dragging-down in lower abdomen.

Examination. — From half-way between umbilicus and pubes, extending over the whole of the lower part of the abdomen, there was marked sensitiveness on pressure. By vagina, a soft mass, the size of the fist, excessively sensitive, was found in Douglas's pouch, and on this the uterus rested in a position of retroversion. Bright red blood flowed from the cervix. Uterus measured three inches in depth. Temperature 99°; pulse 110.

Operation. — Dr. Holder assisted. Drs. Conant, McQueeny and Storer were present. On opening the peritoneal cavity, dark-colored blood welled up through the incision. The abdominal cavity below the incision contained fluid and clotted blood of a dark color, and no bright blood was found until the right tube and ovary were brought into view. A portion of the right tube towards the ovary was found dilated. This dilation was about the size of a small English walnut, and from the upper part of it fresh blood oozed out through an opening the size of a pin's head. The right tube and ovary were ligated and removed. On the left side a cystoma of the ovary was found, and it, with the tube, was ligated and removed. The peritoneal cavity was thoroughly washed out five times with a saline solution, and the abdominal wound closed with silk. Silk was used, as my supply of silver wire had been exhausted on a laparotomy done two hours before. About a quart of fluid and coagulated blood was removed. The mass in Douglas's pouch was composed of coagulated blood, and was dug out with the fingers. Sutures removed on the eighth day. Convalescence was uninterrupted.

Twenty-three days after the operation she was discharged well. December 2d, she reported that she felt perfectly well.

My first case of extra-uterine pregnancy was operated on November 26, 1877. Rupture took place at the Globe Theatre. The patient gave a "loud scream, and fell to the floor unconscious." She was carried home in a carriage, and after a few weeks' stay in bed was able to be about. Though an old patient of mine, I had not seen her until she got about. On examination, a mass as large as a cocoanut was found posterior to the uterus. This mass felt hard, somewhat elastic and non-fluctuating. Cæliotomy was done, and an intra-peritoneal hematocoele found. The coagulated blood was walled off by adhesions between intestines, omentum, tubes and broad ligaments. On the right

side the appendix helped to make part of the wall. Both tubes and ovaries were removed and the abdominal cavity cleansed of blood. Drainage-tube inserted. The pathologist was unable to find anything in the mass of blood and débris that would point to a rupture of an extra-uterine pregnancy as the source of the intra-peritoneal haemorrhage.

Dr. Whitney's Report. — "The following is the description of the ovaries and tubes from the case of Mrs. G. F., received from you, October 1, 1891:

"(1) Ovary and Tube. The portion of the tube measured about six and one-half centimetres. About two centimetres from the fimbriated end, which was normal, was a rounded enlargement measuring about two and one-half centimetres by two centimetres, dark red in color and covered with shaggy, thin adhesions. About the middle of the nodule opposite the side of the ligament was a very small rent with a hemorrhagic infiltrated edge. The remainder of the tube, about two centimetres, was of normal size and calibre. Sections made through the nodule, and examined microscopically, showed the greater part to be made up of blood clotted among small villous projections, fibrous in character, and covered with a low epithelium, similar in every way to the villi of an immature placenta. Just beneath the outer surface were large and very thin-walled vascular sinuses. The cavity of the tube was dilated, and its lining membrane was apparently reflected up on to the mass of blood and villi: but whether it was continuous entirely over it, could not be determined. Apparently, however, it was not. From the distal end of the nodule there opened a distinct diverticulum from the tube, which could be followed almost to the fimbriated end, where it stopped. The relations were such as to show that the nodule had developed entirely in the main tube, and not in the diverticulum. In none of the sections was there any evidence of a fetus found. The ovary attached to this tube measured two by two and one-half centimetres, was irregularly shaped, and from one place a reddish nodule projected, which, on section, showed an irregularly festooned outline enclosing a yellow mass of large cells (corpus luteum).

"(2) Tube and Ovary. The piece of tube measured about six centimetres, and was of normal size and structure. The ovary measured about three by four centimetres, and was mostly made up of a cyst, filled with thin fluid, extending deeply into the hilus, where there was a layer of ovarian tissue gradually thinning out over the cyst.

"The case is one of tubal pregnancy, with rupture. There are no positive data as to the length of time, but from its size it is probably within two months."

THE TITLE OF M.D. IN ENGLAND. — A case of interest to the medical profession in England has recently been decided by the court of Queen's Bench. The defendant having the right to practise in England by the degree of L.S.A. only, publicly described himself as an M.D. on the strength a degree issued by the Beach Medical Institute of Indianapolis. It has been decided that the possession of a degree not registrable in England is not sufficient to justify the holder in describing himself by the title of the degree for the purpose of obtaining practice, even if he has already the right to practise by virtue of some other degree.

Medical Progress.

REPORT ON PROGRESS IN OBSTETRICS.

BY CHARLES M. GREEN, M.D.

MATERNAL IMPRESSIONS.

EVER since the appearance of a paper on this subject by Fordyce Barker, not long before his lamented death, the journals have furnished numerous instances, apparently well authenticated, of the effects on offspring of startling impressions on the mother. It is not easy to explain away on the "coincidence" theory these evidences of marked physical impression during pregnancy: nor again is it easy to understand how these impressions occur, nor why they do not occur oftener, if at all.

Herr¹ (Ottawa, Kan.) reports two authenticated cases, one quite recent in his own city: a lady six weeks' pregnant was summoned to court, and was interrogated by a justice who had cleft palate. The woman was much frightened and for weeks this experience was present in her mind: her child was born with a deformity identical with that of the justice. In the second case, a pregnant woman was frightened by a frog which had been purposely placed behind her chair: she fainted when she saw the frog, and her child was born with a head which was said to be "the exact image" of the frog's. [Was it simply a species of anencephalus?]

[One case has occurred to the writer, in which a pregnant woman was startled by a rat on going down a flight of stairs in the dark: her child was covered as to its back with a growth of soft, brownish-gray hair, resembling that of the common rat, which did not disappear as the child grew out of infancy. The question is occasionally raised, apropos of the physical defects and deformities which are so frequently reported as the result of maternal impressions, why physical beauty may not be imparted to offspring by suitable influences thrown about the mother: it is quite commonly believed among certain circles of the laity that such a result is possible. Medical science has not lent itself to any extent to the solution of these psychophysiological questions; but the future may have much in store for those interested in the prosecution of inquiries in that direction. — REP.]

STRYCHNIA AND THE HOT DOUCHE IN THE PROPHYLAXIS OF PROTRACTED LABOR.

Ferguson² (Toronto) recommends the administration of strychnia in the latter part of pregnancy with a view to improving the muscular tonicity of the uterus and thereby shortening the duration of labor: incidentally the drug is known to act as a bitter tonic and as a corrigent, to some extent, of intestinal inactivity so common in pregnancy. Ferguson gave strychnia to one hundred gravide whose previous labors had been protracted owing to uterine inertia and irregular, crampy pains: primiparae were excluded. The hundred cases treated with strychnia had an average of nine hours of labor; whereas the average duration of previous labor in the same hundred women was seventeen hours. He found that the uterine tonus was much improved by the course of strychnia, the contractions being longer and more regular: he also observed that

better contractions ensued in the third stage, that after-pains were greatly lessened, and the amount of hemorrhage reduced. The dose employed varied from one-sixtieth to one-thirtieth of a grain three times a day: one patient had one-sixteenth of a grain thrice daily, her two preceding labors having been characterized by almost complete uterine inertia. No ill effect was observed in any case.

[The reporter has for some years been accustomed to give thrice daily during the last two months of pregnancy, to all but apparently strong and robust women, one-fourth of a grain of extract of *nux vomica* combined in pill with one grain of Querenne's iron. No observations have been made by him with reference to the possible shortening of labor by this treatment; but there has been no question but that patients have been generally benefited thereby. Ferguson's experiment is an interesting one, and his recommendations worthy of trial. Certainly very many gravide are much benefited by general tonic treatment, and those of flabby muscular fibre ought to have a better labor under the stimulating influence of strychnia. It is perhaps needless to add, however, that too much reliance must not be placed in drugs alone, but that attention should be directed to nutrition and general hygiene: poorly nourished muscles cannot effectively respond to any stimulus. — REP.]

Ferguson also recommends the use of a two gallon vaginal douche twice a day for a week or ten days prior to labor, as a means of softening the cervix in primiparae and in those in whom previous tedious labors have been known to be due to rigid soft parts: he recommends that the water should be 105° to 110° F. hot, and that the hydrostatic pressure should be only sufficient to cause the water to flow. Used in this way he has never known the douche to induce labor prematurely.

THE TREATMENT OF POST-PARTUM HÆMORRHAGE FROM TEARS OF THE CERVIX.

While haemorrhage from the smaller vessels in the cervix may be controlled by hot vaginal douches or by gauze tampons with or without styptics, tears of the uterine artery or one of its large branches give rise to bleeding which soon proves alarming unless the torn vessels are secured by suture. The operation of repairing a torn cervix post-partum is not a difficult one, especially since it is easy with vulsellæ forceps to draw the uterus down to the vaginal introitus, where the sutures can be introduced by sight. But if the attendant has not the means at hand for properly repairing the tears, and wishes to control the haemorrhage while waiting for assistance to arrive, it is useful to remember that traction on the cervix with a suitable forceps will accomplish the desired result.

Parsonow³ (Stettin) reports a case in which this fact was clearly shown: called to the assistance of a colleague he found that for over two hours the latter had controlled serious haemorrhage from a torn cervix by bimanual pressure; but on the least cessation of pressure the bleeding was shown to be unchecked. Parsonow seized the cervix with toothed forceps and drew it deeply down, when the bleeding at once ceased: sutures were then inserted and the tear closed. In other words, strong traction on the uterus puts the large vessels on the stretch and thereby efficiently occludes them.

¹ Medical Record, November 28, 1891.

² American Journal of Obstetrics, May, 1891.

³ Centralblatt für Gynäkologie, 1891, 27.

A PLEA FOR FULL MECHANICAL DILATATION OF THE PARTURIENT CANAL BEFORE OBSTETRICAL OPERATIONS.

Under this title Abbott⁴ (New York) has called attention to an important obstetric procedure, which is too apt to be ignored or forgotten. It is commonly acknowledged that the cervix should be dilated by nature or art before delivery is attempted; but there is less appreciation of the desirability of a well-dilated vagina and perineum before the child is allowed to pass. Some writers indeed have recommended leaving the membranes intact until the vagina as well as the cervix is dilated: the younger Byford wrote in advocacy of such procedure. But in most cases the membranes rupture spontaneously when the os uteri is fully expanded.

Recognizing the necessity in some cases in which rapid delivery is indicated of extracting without previously complete dilatation, Abbott truly claims that except in such emergencies, complete dilatation of the entire canal should be secured before operating. The advantages of such dilatation are that more accurate diagnoses can be made, instruments can be more easily used, lacerations are less likely to occur, and there is less danger of serious compression of the fetal head and of uterine atony from exhaustion. Certainly it is as desirable to dilate the lower as it is the upper part of the birth-canal. The writer further points out that oftentimes when the head is arrested, complete dilatation under anesthesia stimulates increased activity in the expulsive forces and at the same time diminishes the resistance to be overcome; hence a labor will often terminate naturally which would otherwise have required artificial assistance.

The dilatation is easily accomplished with the hand, introduced with care in conical form and under most careful asepsis.

ANTIPYRIN AS A MEANS OF RESTRICTING THE SECRETION OF MILK.

Guibert⁵ (Montpellier) found accidentally on two occasions that after taking antipyrin at the rate of two grams a day, nursing mothers showed already on the second day a considerable diminution of milk secretion: after the antipyrin was omitted the milk returned to its former amount. He then tried the drug on nineteen cases, in seven of which the women had nursed several days, in the other twelve not at all: in each case he found the secretion was diminished. If the drug was continued for some days, the milk entirely disappeared.

SALT-WATER ENEMATA IN SEVERE POST-PARTUM ANEMIA.

The intravenous and subcutaneous use of salt solution has been found efficacious in severe anæmia post-partum; but in these forms of administration special instruments and skill are necessary. Heer⁶ has met with good results by introducing the solution per rectum,—a method easy of application and unattended with danger. In a case of severe hemorrhage following podalic version for placenta prævia, there was profound anæmia which did not improve after the usual treatment; and the radial pulse was not to be felt. About two litres of a lukewarm, one-half per cent. salt solution (one teaspoonful to the litre) were ad-

ministered per rectum, and the patient rallied with surprising rapidity, but collapsed again after a few hours. After a repeated enema of this solution, the pulse returned, the general condition continued improved, and the patient recovered in about a month.

Heer recommends in all forms of severe anæmia the rectal administration of salt solution as far superior to the intravenous or subcutaneous methods of application.

THE CARE OF THE BLADDER BEFORE AND AFTER LABOR.

Coe⁷ (New York) has a useful paper on this subject which deserves to be widely read. The article does not admit of sufficient condensation for this report; but a few points are worthy of especial emphasis.

The diplococcus found in the urine of puerperal cystitis is identical in form with that constantly present in the lochial discharge, and bacteria may reach the bladder by extension along the urethra, even when no catheter has been used: hence the prophylactic value of spraying or otherwise cleansing the external genitalia several times daily with an antiseptic solution. [A very good rule is to cleanse the vulva every time the pad or napkin is changed.] It is unnecessary to point out the probability of infection from the use of unclean catheters; but it is not fully realized that bacteria may be carried into the bladder, if the catheter is passed without previously cleansing the vestibule, and even then, if it is passed by touch. Garrigues has said "the old way of drawing the urine under the bedclothes was modest, but is irreconcilable with antiseptic midwifery." In short, he who would surely avoid puerperal cystitis must not only use a clean catheter, but must place it directly within the meatus by sight, the parts having previously been cleansed.

While the catheter must occasionally be used for various reasons, it is often employed simply because a woman cannot pass her water lying down. To overcome this inability, Skutsch has recommended that women acquire the art of urinating in the dorsal posture by practice in the latter weeks of pregnancy. Coe justly thinks this an unnecessary procedure, and has adopted the plan of allowing the woman who cannot micturate lying on her back to be supported in a sitting posture on a bed-pan in normal, uncomplicated cases. [This procedure would seem startling to many, until they remembered that among the poor this is a common practice. Unless a woman is very weak from long, exhausting labor, from hemorrhage or antecedent disease, unless there is some inflammatory complication or a torn perineum, and unless there is some cardiac lesion, there seems to the reporter no good and sufficient reason why a woman should not be assisted to sit up six or eight hours after labor long enough to pass her water. Many women can pass urine lying on the face or resting on the hands and knees; but if not, there would seem to be no adequate reason why, in uncomplicated cases, puerperae should not be allowed to sit up. Considering the risks of careless catheterization, such a plan is eminently preferable to a ready resort to the catheter. In a recent case of inability to pass urine on the back, the reporter allowed the woman to sit up with no untoward result. REP.]

PROFESSOR BARDELEBEN, of Berlin, on the fiftieth anniversary of his graduation in medicine, received from the emperor a patent of hereditary nobility.

⁴ Medical Record, November 26, 1891.

⁵ Arch. de tocologie, 1891, June. Centr. f. Gynäk., 1891, 50.

⁶ Centralblatt für Gynäkologie, 1891, No. 48.

⁷ American Journal of Obstetrics, July, 1891.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, November 23, 1891, the President, DR. FREDERICK I. KNIGHT, in the chair.

DR. J. H. MCCOLLUM read a paper entitled

THE SANITARY CONDITION OF BOSTON: A STATISTICAL PAPER.¹

DR. H. P. WALCOTT: Dr. McCollum's paper is most interesting, and has for its groundwork a body of vital statistics unequalled, for a city of the size of Boston, in this country, and not surpassed in any European State. It is probably well known here that the compulsory notification of cases of certain communicable diseases, which has existed for years here, has been introduced into Great Britain within the past two years only.

There is one apparent omission in Dr. McCollum's paper which I am inclined to criticise, and that is, the proportion of the number of children living, below five years of age, to the total population. I cannot help thinking that a chart, which recorded this proportion in connection with the other facts, might not show the curve so favorable to Boston as compared with Glasgow, which is observed in Chart III.

Though this proportion cannot now be ascertained for every year, it can be stated with reasonable accuracy for the years of the National and State census. I hope that this very valuable paper may be enlarged by some vital statistics of the sort indicated, because our public health authorities may in this way get some help to better methods of preventing excessive infant mortality.

DR. S. H. DURGIN: The paper is full of interesting facts, and it would be easy to conclude from a statistical point of view that Boston is in a good sanitary condition compared with many other cities. I suppose it is questionable as to how far we are justified in stating the sanitary condition of a city by its rate of mortality, and yet the fact that some relationship exists between the death-rate from preventable causes and the sanitary condition will not be doubted.

In looking over the death-rates of London to-day, I find that the percentage of deaths of children under five years of age to the total mortality has been gradually reduced from 44 in 1880, to 40 in 1889, while in Boston the percentage in the same class has been reduced from 38 in 1880, to 32 in 1890.

I wish I could present the comparative physical condition of Boston to you in as favorable light as Dr. McCollum has presented the statistical comparisons.

If we measure our present condition by the advanced standard of sanitary requirement, we shall find many deficiencies. It is only when we compare the present state of our city with that of ten or twenty years ago that we can see a steadily improving sanitary condition. It would require too much time to review all of these changes, some of which have been most satisfactory. It may be stated briefly that our sewerage system has been vastly improved and although not wholly finished, will soon be satisfactory to our own and neighboring cities.

¹ See page 49 of the Journal.

Our streets have been the subject of much discussion. They have been considerably improved in cleanliness and for practical use during the past year, and we can reasonably hope for greater changes as the subject becomes better understood by the City Council. Privy vaults and cesspools, which have been a constant menace to our people, are rapidly disappearing. The location, construction and care of stables are matters now dealt with under careful regulations and to the greater comfort of those who live about them. The high-tide levels, which were formerly of great annoyance and injury in parts of the city have been largely reduced by the construction of the intercepting sewer, which nearly encircles the city, but the ground-water line is still too near the surface in many parts of the city for the welfare of those who live on the lower grades. The tenement-house has been greatly improved in construction, adaptation and care, and yet a large percentage of the poorer class of the city are living in tenement-houses which are more or less overcrowded or otherwise unsuited for such occupancy. One great hindrance to a more rapid improvement in the tenement-house population is the lack of better but cheap accommodations, particularly in small isolated houses in the suburban districts, to which families may be sent from the crowded tenement-house.

DR. G. H. M. ROWE: I have but little to add to the subject of Dr. McCollum's paper. I have been extremely interested in the facts as given by him, and I think the paper is entitled to much praise. Like all statistical papers, it is one that should be studied by comparison in order to get at the deductions.

There is one suggestion that has been alluded to by Dr. Durgin, and that is, that the mortality is not always the proper guide for the number of cases of these various diseases. This has been notably exemplified at the Boston City Hospital. Some four or five years ago we rarely had a daily average of over forty to fifty cases of typhoid fever at the height of the typhoid season. Two or three years ago our daily average was between eighty and ninety, but this year, for six consecutive weeks, we have not run below ninety-five, and have had on a single day, one hundred and nineteen cases in the hospital. While the daily average number of cases has been very much larger, the death-rate has been much less than five years ago.

The opposite is true in regard to diphtheria. So far during the year we have had a much less number of cases than last year, and our mortality has been much higher. There are various ways of explaining this condition: the type of the disease and the stage in which it is brought to the hospital. The number of cases and the tables of mortality of the same sometimes go in opposite directions, as I have indicated. I believe it to be undoubtedly true that the laws in regard to compulsory notification in regard to contagious diseases are not carried out with the thoroughness that should be done. When this law is honestly and efficiently carried out, we shall then know much better of the true condition of public health in our community than we do now from the returns in the mortality of these diseases.

DR. J. B. AYER: Dr. Durgin referred to the disinclination of those in crowded parts of the city to live in the suburbs. It seems to me in the part of the city where I live there has been a great change in

that direction. Many of the families who lived there a few years ago now live several miles away from the State House. Perhaps they did not live in crowded houses, but several families in a house.

DR. GEO. B. SHATTUCK: Dr. McCollom's paper was so condensed and so full of important and interesting statements and figures that I may have missed some things, but I should have been glad to have had him give us a few more conclusions in regard to the subject. For instance, I should have liked his opinion with regard to consumption in reference to races, that is, some explanations in regard to the very high mortality in consumpti on here; whether our large proportion of Irish in the population accounts for it, and whether the number of that race in different wards bears any relation to the deaths from consumption. Of typhoid fever I see a great number of cases every year at the City Hospital. I never have had more than during this winter. In my service alone I have had pretty steadily an average of between thirty and forty cases, and that is only one out of three medical services. I have frequently heard the statement that a good deal of the typhoid fever is brought into Boston from the outside, and consequently I have taken an interest in the individual cases as far as I could to find out whether these people have been outside of Boston, and I find that in many instances they have not, that the disease probably originated in the city. Of course I am speaking of cases as they are seen at the City Hospital, and I should like to have had some conclusion as to whether the amount of typhoid fever was proportioned in any way to the wells and cesspools in the wards. I suppose a low rate of mortality in typhoid fever in a city is to be explained by a good water-supply and good drainage. The present perfection of those systems in Berlin, where much money has been spent, would be given as an explanation of the low rate of mortality from typhoid fever there. Certainly Berlin is a city where otherwise you would expect to have a good deal of typhoid fever. No doubt Dr. McCollom in summing up can give us some interesting conclusions in regard to these points.

DR. J. H. MCCOLLOM: In reply to Dr. Walcott's question I would say that it was impossible for me to obtain the requisite data from all the cities for estimating the percentage of deaths under five years of age to the living of that age for 1890. I agree with the gentleman regarding the importance of this percentage. The estimated number of living children under five years in Glasgow and in Edinburgh for 1890 with the percentage of deaths of children of this age can be found in the Annual Report of the Registrar-General of Scotland for 1890. In Glasgow, for 1890, the number of living children under five years of age was 72,636; the number of deaths was 5,780, giving a percentage of 7.96. The percentage of deaths under five years of age to the total mortality for the same year was 43.20. In Edinburgh, for 1890, the number of living children under five years of age was 33,258; the deaths were 1,899; the percentage was 5.71. The percentage of deaths under five years of age to the total mortality for the same period was 35.00. In these two cities it is evident that the percentage of deaths under five years to the total mortality bears a direct relation to the death-rate per one hundred of the estimated number of living children of this age. The accompanying table gives the number of living children under five years of age; the number of deaths under five

years; the death rate per one hundred, and the percentage to the total mortality in six cities for 1880. As this was a census year the number of living children in the American cities may be considered correct.

DEATHS OF CHILDREN UNDER FIVE YEARS IN BOSTON, NEW YORK, PHILADELPHIA, GLASGOW, EDINBURGH AND BERLIN, 1880.

Cities.	No. of Children under 5 yrs.	Deaths under 5 yrs. in 1880.	Per cent. Deaths to the Living	Per cent. to Total Mortality.
Boston	37,138	3,319	9.01	39.26
New York	140,387	14,650	10.43	45.00
Philadelphia	91,544	6,799	7.43	39.33
Glasgow	?	6,042	8.68	45.40
Edinburgh	?	2,138	7.60	42.85
Berlin	143,023	19,532	13.65	39.51

It will be seen from this table that a high percentage to the total mortality does not always indicate a high death-rate of children, as, for instance, Glasgow compared with New York. The percentage to the total mortality in the former city being 45.40 and the death-rate per one hundred of children under five years being 8.68, while in the latter city although the percentage to the total mortality is practically the same, the death-rate is 10.43. If Boston and Philadelphia are compared, it will be seen that, although the percentage to the total mortality in each of these cities is 39.00, there is a marked difference in the percentage of deaths under five years to the living of that age, the rate being 9.01 in the former city and 7.43 in the latter. If Berlin and New York are compared, however, there seems to be some relation between the death-rate under five years of age and the percentage to the total mortality. An increase in the death-rate coincides with an increase in the percentage to the total mortality in these two cities.

In reply to the question of Dr. Rowe, I would say that I have no doubt of the advantage gained by compulsory notification of cases of contagious disease. Of course all the cases are not reported because in many of these instances there is no physician in attendance.

In reply to Dr. Shattuck's first remark I have to say that, as a mere opinion based upon a very limited number of statistics, the children born in this country of Irish parents, are the most susceptible to consumption; that the young Irish immigrant comes next; and that the German immigrant is the least susceptible. The following tables give the deaths from consumption in Boston for 1890 with the nativity of the parents. These figures would be much more valuable if the number of the living of each nationality was given.

DEATHS FROM CONSUMPTION IN BOSTON, WITH NATIVITY OF PARENTS, 1890.

Nativity.	No.
United States	237
Ireland	796
England	37
Scotland	11
Germany	41
British Provinces	91
Italy	11
Other Countries	129
Mixed	78
Unknown	73
Total	1,496

The comparative immunity of the Italians is an interesting fact. Coming from a warm and invigorating

climate we should naturally suppose that they would be extremely susceptible to this disease, when, as a matter of fact, it is not so prevalent among them as among the Scotch and the English. As the number of Italians in Boston is nearly three times as great as that of the Scotch or of the English some idea of the relative frequency of this disease in these nationalities may be gained from the table. In reply to Dr. Shattuck's second remark, I have to say that typhoid fever has not been most prevalent in the localities where vaults exist. There are so few vaults in Boston, at the present time, that they could not be very important factors in the causation of this disease. The difference in the ratios of Wards 6 and 7 may be explained by the fact that there are more immigrants arriving in the former ward than in the latter. The newly arrived immigrant is particularly susceptible to this disease.

DR. R. W. LOVETT read a paper on,

THE TREATMENT OF CHRONIC SPRAINS OF THE FINGER-JOINTS.²

DR. W. P. BOLLES: I have been much interested in Dr. Lovett's paper as he has treated of a class of cases that occur pretty commonly in surgical practice, and yet are not adequately noticed in the text-books. The pathology is undoubtedly complicated, and I think is pretty well illustrated by a case under my care at present. A gentleman accidentally struck the end of his finger against some substance which hurt it rather severely at the time. In a little while it seemed better, but after three or four days it had not got well, and he came to me with a very painful terminal joint of his little finger, swollen, reddened, skin shiny over it, intensely sensitive, aching when it was not being manipulated. I followed the routine treatment, put it on a splint, and he came back to me in three or four days, and it was about the same. Then he had hot water applications and some massage, and again he came and it was just about the same. Then the inflammation had extended backwards on the finger until the next joint became swollen, and at the end of three weeks the whole little finger was uniformly swollen and sausagelike in shape and shiny. It is now about four weeks since the injury and he has acquired the habit of holding his little finger off, can't close the hand. The final joints of nearly all the fingers are mostly immovable. If I undertake to shut in all the other fingers which have not been hurt, he complains of it. I think there is no doubt that this extension of the stiffness and pain is a nervous condition resulting from the more or less constant attention to his finger muscles and arm muscles, and attempting to hold the little finger perfectly immovable. It seems to me further fixation of the hand or finger is hopeless, and I have advised him to leave off apparatus and begin to move the finger and have massage applied once or twice a day. I think I shall try the faradic current for the relief of pain and limbering up of the joints. I very much question whether fixation at the beginning was of benefit. Probably if he had given it proper attention at first, he might not have gone through this series of discomforts. He is a nervous man.

DR. M. H. RICHARDSON: I do not think Dr. Lovett need apologize for presenting this subject. We ought to judge of a subject from the frequency of occurrence and the difficulty of treatment. I think these cases ought to be treated as if some serious disease was

possibly in progress. Take the case of the woman whom he showed to-night, I think that might have resulted in loss of the finger, especially as the lateral ligaments of the joint are already lax. I have been accustomed, in what few cases I have seen of late years, to keep the joint still, and to get passive motion as soon as possible.

DR. E. O. OTIS: I saw a case sometime ago, the result of a foot-ball accident. A student received a bad sprain of the second phalanx of the finger. When he came to me sometime after, the joint was large and almost immovable, with not very much pain. It was immobilized and the splint removed every day and hot water used. As time went on he did not seem to receive much benefit, and at this time it is still in that large, more or less immovable condition. What the result will be I do not know. It is a good suggestion of Dr. Lovett's that massage be applied.

An interesting fact in this case was that he bound this finger up tightly with the other finger, and with the two fingers extended he was not only enabled to practise foot-ball, but to play in the championship games without apparent further injury to the finger.

GALL-STONES REMOVED FROM CYSTIC DUCT. SUPPURATING VERMIFORM APPENDICES. MALIGNANT TUMOR OF OVARY.

DR. M. H. RICHARDSON showed two specimens of gall-stones removed from the cystic duct during the past week. The first is a very small one. The diagnosis was made by Drs. F. C. Shattuck and Cutler, and an operation for relief was advised. The gall-stone was impacted where these gentlemen said it was, in the cystic duct of a very much contracted gall-bladder. This is the third operation on the gall-bladder I have performed for gall-stones. The gall-bladder was greatly contracted, thickened and very friable. This last condition, friability, makes all manipulations very difficult, especially that of approximation and suture to the abdominal wall.

The second case was of a gentleman of sixty-four, whose life for eight years had been made miserable by biliary colic. He had spent a portion of every year at Carlsbad, with temporary relief. Recently he returned from Carlsbad without the accustomed benefit, and has required frequent and daily injections of morphine to make him comfortable. The diagnosis of gall-stones was made long ago by his physician, Dr. J. P. Oliver, and confirmed by Dr. Fitz. We found eight large faceted stones in a row extending from the gall-bladder into the cystic duct.

Both these cases have done remarkably well. The boy now, at the end of a week, is in a very good condition. The second operation was performed two days ago, and the temperature is now normal.³

I would like to mention in this connection a case I had a year ago. It was that of a woman who had suffered many years with symptoms of biliary colic accompanied by jaundice and profound cholemia. I found the gall-bladder contracted and friable with a large gall-stone in the cystic and another in the hepatic duct. In this case, after the removal of the stones, I was confronted with the formidable condition of a large opening near the foramen of Winslow, with vast quantities of bile escaping into the abdominal cavity. I contrived to fasten a glass tube into the ragged remains of the cystic duct by which, with the

² See page 54 of the Journal.

³ Both cases made speedy recoveries. December 24, 1891.

aid of gauze packing, perfect drainage was established. The woman did well for six or seven weeks, although there was no diminution in the amount of bile discharged through the tube or of the jaundice. At the end of that time she had a gradually rising septic temperature and died from the effect of a sponge which had been left at the time of the operation in the abdominal cavity, in spite of the usual precautions taken to prevent this accident, namely, the counting of all the sponges by a special nurse, both before, during and after the operation.

I have two specimens of vermiciform appendix in both of which there has been perforation and local peritonitis. In both drainage was established among healthy intestines. In each case, as in the first cholecystotomy, I used wick drainage of iodoform gauze, in one combined with a tube. This method provides the most satisfactory drainage in septic cases in my experience. Both cases are doing very well indeed.⁴

The next specimen is one of abdominal tumor removed to-day. It was poor judgment on my part to have attempted its removal. Having started in this attempt, however, there was no possibility of abandoning the operation. It was a rapidly-growing tumor of the abdomen in a woman between fifty and sixty years of age. I had been studying the case for a week, and had come to the conclusion that it was probably malignant tumor of the ovary. I thought so, among other reasons, because of its rapid growth and the coexistence of ascites. I made an incision to-day and finding no apparent malignancy about it, as it presented, determined to remove it. On separating its adhesions to the transverse colon, I met with quite evident malignancy which I had not been able to discover before. It was then too late to retreat, the semi-solid mass having gone to pieces in careful efforts at separation. The descending colon, just below the splenic flexure, was so intimately adherent to the tumor that it was impossible to separate them. I removed a piece about four inches in length at the junction of the sigmoid flexure and the descending colon. It was very difficult, indeed, to bring the divided ends together. The arrangement of the descending colon and sigmoid flexure was a little unusual, the beginning of the sigmoid flexure being rather higher up than normal. It was not as much covered by peritoneum as in the majority of cases. Through the entire bend the disease had established itself. The divided end of the descending colon was immovably fixed in its normal position, but the other end, in the sigmoid flexure, was freely movable. It was necessary, therefore, to bring the movable sigmoid flexure up into the left flank at the posterior wall of the abdominal cavity, and to fix it by means of the ordinary Lambert stitch in this position. I was able to make a very satisfactory joint in the ordinary method. There being no peritoneal covering to the posterior portion of the cut ends I was fearful of an extravasation of feces. I therefore packed above, below and around the joint with iodoform gauze, and I think, if she survive the shock necessarily great, she will do well. Should the stitches give way, drainage will have become established and we shall have nothing more than a fecal fistula as after removal of the appendix, which will take care of itself.⁵

⁴ Both recovered well. December 24, 1891.

⁵ Died a few days later.

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HENRY INGERSOLL BOWDITCH, M.D.

DR. HENRY INGERSOLL BOWDITCH died January 14th in the eighty-fourth year of his age, after a long illness, which he bore with such courage and cheerfulness, and manly patience, that it was a benediction to be near him.

Dr. Bowditch inherited from his father, Nathaniel Bowditch, the eminent mathematician, and his mother, Mary Ingersoll, those sterling qualities which, developed by their example and teaching, made him, in later years, a leader among men. His child-life was fortunate in the companionship of three brothers and two sisters, all very like him in having individuality and force of character. As a school-boy he was kind, generous, sympathetic, truthful, manly, but thoroughly a boy, and the shout that there was "a nigger on the common" or a fight going on between the boys of the opposing sections of the town, brought him quickly to the front. From the open-air life insisted upon by his father came the healthy mind in the sound body. The simple living, the early love of nature, the habits of industry and self-denial so common to the New England life of his time encouraged a thoughtfulness, self-reliance, independence of mind and vigor of action which have become more rare with the increase of wealth and luxury.

In college, he was the same warm-hearted, good fellow, straightforward, impulsive, pugnacious, ardent — although not an ardent scholar — sensitive and popular, always to be depended upon.

After taking the degree of A.B. at Harvard in 1828, and later the A.M., he graduated at the medical school in 1832, having also been house-officer at the Massachusetts General Hospital. Dr. Bowditch spent two years in Europe studying for the most part with Andral, Chomel and especially Louis, whom he fondly called his master. It was still the day of dogmatism and pedantry and system-making, but Louis, one of the first of the iconoclasts, was teaching the close study of nature and the careful observation, faithful records and accurate analysis of facts as the true basis of med-

ical knowledge and practice. Dr. Bowditch came back to Boston full of enthusiasm for Louis's methods, where, indeed, he found Dr. Jacob Bigelow, his senior by twenty-one years, already a pioneer in the new field. While waiting for practice he devoted much time to benevolent work and took great pleasure in helping those who needed encouragement or assistance, especially the young — interests which he kept up to the last. Having by chance been an eye-witness of the famous Garrison mob in 1835, his quick sympathy and intelligent foresight led him to devote his "whole heart to the abolition of slavery." "But," he adds in his diary, "even anti-slavery never has taken me away from constant labor for the elevation of medicine." When he became an abolitionist, church, State, the constitution and laws of the country, old friendships, social ties were all against him. He was mocked, sneered at, passed on the street without recognition by his father's old friends; but his courage never faltered, his faith in humanity and the final triumph of his cause never failed. Without even any feeling of bitterness for his opponents, he worked steadily on, with pistol in one hand carrying the runaway slave in his chaise to a place of safety; a member of the vigilance committee in 1846 and in 1850; working for the fugitive slave Latimer until his release was secured; a co-worker with Phillips and Garrison until the emancipation proclamation. When an escaped slave, Anthony Burns, was given up to his master (May, 1854), and taken in fetters down Court and State Streets with "an overwhelming force of soldiers," Dr. Bowditch dashed past the police on guard, through the cordon line, at the head of a procession of excited citizens, down to the wharf, where a devoted band of abolitionists stood in horror to see the United States cutter, bearing the returned slave, steam away. Vowing that that disgrace should never again happen to the soil of Massachusetts, they formed the anti-man-hunting league, at the instigation of Dr. Bowditch, who was its secretary. Less than a decade later he saw Colonel Shaw march down the same street at the head of his negro regiment; he lived to see slavery abolished, peace and industry established in the South, and himself honored with Phillips and Garrison, and loved by his Southern associates.

With the same qualities he conquered success in his chosen profession. He became admitting physician, 1838 to 1845, and later, visiting physician, 1846 to 1864, at the Massachusetts General Hospital, visiting physician at the Boston City Hospital, 1868 to 1871, consulting physician to the Massachusetts General, City, Carney and New England hospitals, professor of Clinical Medicine in the Harvard Medical School, 1859 to 1867, a member of the leading medical societies in Boston, president of the American Medical Association in 1876. He was a member of the American Academy of Arts and Sciences, of the Paris Obstetrical Society, of the Paris Society of Public Hygiene; and honorary member of the New York Academy of Medicine, of the Philadelphia College of Physicians,

and of the New York, Rhode Island and Connecticut State Medical Societies.

When he was appointed admitting physician, negroes were not received as patients in the hospital. He offered a test case of pneumonia, resigned his position when his negro patient was not admitted, and carried his point, his resignation not being accepted.

After he became of the first eminence in his branch of the medical profession, and his reputation had extended throughout this country and Europe, he was still the man before the physician, and kept in close touch, through the Thursday Club and constant attendance on scientific and medical society meetings, with the spirit of progress in all branches of knowledge. Whatever interested humanity interested him. He gave his assistance freely to all movements to elevate mankind, regardless of race or creed. When his fame was at its zenith, probably even his own family did not learn when his quick eye of sympathy had seen so many ways to help that after a long day's work he had given away far more than the amount of his fees, so little did his right hand know what his left hand was doing. He gave himself freely and gladly with his gift.

To his professional associates he was an inspiration; to the younger men his unfailing kindness of heart and generosity gave strength and courage; the example of his life raised them to a higher plane of living. To one who had sought advice from many older physicians, and had heard how to get practice and fame and wealth, Dr. Bowditch's words were: "Never do anything which will make you think afterwards that you have been a sneak." Even before the surgeons, in 1850, he successfully operated for empyema; to one surgeon whom he considered one of the boldest, but not willing to open a perinephritic abscess, he proposed himself to push in the scalpel where the surgeon pointed out the proper spot. In sanitary science, too, he led the way. With the eloquence of sincerity, showing to a committee of the legislature his chart indicating the prevalence of pulmonary consumption in Massachusetts, he explained to them the law which he discovered, in 1862, of its relation to soil-moisture, and did much to persuade them to create the first State Board of Health in this country, an example which thirty States have followed. When the board was appointed, in 1869, Dr. Bowditch was easily first in the estimation of the medical profession and the community for the arduous and responsible duties of its president, a position which he retained, at great sacrifice of his time and professional income, until 1879. When the powerful interests attacked by the board in the cause of the public health resisted, and the politicians threatened, and other members of the board hesitated, he pushed on, ardent and impulsive until the point was gained. If his enthusiasm carried him too fast or too far, he was always ready to modify his course. If in his vehement indignation and scathing rebuke of anything which he considered mean or unworthy he had seemed to wrong any one, he was quick with generous redress. His simplicity and earnestness were so trans-

parent that, as one of the members of the board said, there could be no real dissension in a board of which he was the chairman; and his sense of humor, love of fun, and quick intuition helped him out of many difficult places.

When the yellow fever epidemic of 1878 aroused the nation to the need of a National Board of Health, the chairmanship seemed the opportunity of Dr. Bowditch's life. No one else had the personal qualities and the reputation to fill the place. Unfortunately, the state of his health prevented his accepting it, or, indeed, of serving as a member of the board for more than a year; and there followed its melancholy wreck, which so many thought that he, if he had been chairman, might have averted.

He was one of the earliest advocates of specialties in medicine in this country, freely asking the advice of men much younger than himself, and treating with respect the sincere opinions of the least experienced if given, as he gave his opinions, without assumption. He was one of the first to believe in women as physicians, and thought it but justice to them, as well as good policy for the community, to give to them the same advantages of study as to men.

More than 90,000 manuscript pages of records of cases of private patients, ten printed papers and sixty-six pamphlets printed in twenty-nine journals or society transactions, with numberless short articles on various subjects, attest the industry of his life. His letters and notes and diaries are full of his work with scarcely a mention of his honors.

His epoch-making work in medicine was his thoracensis, his first operation with the Wyman aspirator having been done in 1850, some time after Dr. Morrill Wyman's "brilliant operation." But his greatest title to honor from his professional associates was his character. An earnest searcher after truth, he stimulated and encouraged good work in others. Honest, fearless, outspoken, he made friends of his enemies by the simplicity, purity, sincerity, and unselfishness of his purpose. He compelled an admiration of the right and a hatred of wrong.

At the meetings of the American Medical Association, at which he was constant in attendance so long as his health permitted, men from Maine to California caught the spirit of his enthusiasm, they felt the stimulus of his eager search for the truth, they were so filled with admiration of his noble life that they went back to their work with a higher sense of personal duty and professional obligation.

During our civil war Dr. Bowditch was an untiring worker in numberless ways. He was enrolling-surgeon, and to him more than to any other single individual was due the persistent effort by which Congress passed the law creating an efficient ambulance service in the army. The ardor of the patriot accepted the loss of the son bearing his grandfather's name, killed while leading a squadron of cavalry at Kelly's Ford; but to the father's love it was a life-long grief, how deep few only could know.

Dr. Bowditch's home-life was ideal, "I think of his home as more filled with love than any other home I ever knew," writes one of his friends. In one respect Dr. Bowditch possessed a remarkably judicial mind: in that he clearly recognized his own defects. Indeed, he was not only always modest and free from assumption, but he was his own severest critic even where others saw only cause for praise. When he erred in judgment, he did so from spontaneous self-forgetfulness born of a righteous impulse. In the days of chivalry he would have been the knight without fear and without reproach.

Some of his more important medical publications are:

- The young stethoscopist; or, the student's aid to auscultation. 1848.
- On pleuritic effusions, and the necessity of paracentesis for their removal. 1851.
- On paracentesis thoracis, with ~~an~~ analysis of cases. 1852.
- On paracentesis thoracis. An analysis of twenty-five cases of pleuritic effusion in which this operation was performed. 1853.
- On paracentesis thoracis. 1857.
- Paracentesis thoracis: a *résumé* of twelve years' experience. 1863.
- Thoracentesis, and its general results during twenty years of professional life. 1870.
- Two fatal cases of pleuritic effusion. Would not thoracentesis have saved life? European and American treatment of pleurisy. 1882.
- Topographical distribution and local origin of consumption in Massachusetts. 1862.
- Consumption in New England; or, locality one of its chief causes. 1862.
- Is consumption ever contagious, or communicated by one person to another in any manner? 1864.
- Consumption in New England and elsewhere; or, soil-moisture one of its chief causes. 1868.
- Consumption in America. 1869.
- Open-air travel as a cure and preventer of consumption, as seen in the history of a New England family. 1889.
- Report of the committee on climatology and epidemics in Massachusetts, 1868-69. 1869.
- Preventive medicine and the physician of the future. 1874.
- Annual address in state medicine and public hygiene. 1875.
- Address on hygiene and preventive medicine. 1876.
- Public hygiene in America. 1876.
- Sanitary organization of nations. 1880.
- Yellow fever epidemic: what should be done? Imperative need of a national sanitary board. 1888.
- An apology for the medical profession as a means of developing the whole nature of man. 1863.
- Letter from the Chairman of the State Board of Health concerning houses for the people, convalescent homes, and the sewage question. 1870.
- The medical education of women. The present hostile position of Harvard University and of the Massachusetts Medical Society. What remedies therefor can be suggested? 1881.
- Intemperance in New England. How shall we treat it? 1872.
- Intemperance, as governed by cosmic and social law. How can we become a temperate people? 1872.
- Inebriate asylums, or hospitals. 1875.
- Abuse of army ambulances. 1862.
- A brief plea for an ambulance system for the army of the United States. 1863.
- The past, present, and future treatment of homœopathy, eclecticism and kindred delusions which may hereafter arise in the medical profession, as viewed from the stand-

points of the history of medicine and of personal experience. 1887.

Louis (P. C. A.). Pathological researches on phthisis. Translated from the French, with introduction, notes, additions and an essay on treatment. By Ch. Cowan. Revised and altered by H. I. Bowditch. 1836.

Louis (P. C. A.). Memoirs on the proper method of examining a patient and arriving at facts of a general nature. From the French, by H. I. Bowditch. 1838. Brief memoir of Louis and some of his contemporaries in the Parisian school of medicine of forty years ago. 1872.

THE TREATMENT OF INFLUENZA.

In the prophylaxis of influenza it must be remembered that the disease is a something (germ or other morbid factor) plus, not infrequently, a severe cold. A catarrh or cold is a mechanical congestion of the naso-pharyngeal mucous membrane due to exposure to alternating temperatures, not necessarily accompanied by fever or any constitutional disturbance. This congested mucous surface furnishes a favorable nidus for the influenza germ as well as for the germs of ordinary suppuration. The germs or their protamines find entrance into the blood and produce the rigors and other constitutional symptoms. The main prophylactic indication, then, would be to avoid, as far as possible, the causes of ordinary colds. When once the congestion is established, means should be taken to prevent this extending, and to destroy any germs that have effected lodgment on the congested membrane. Here the use of diaphoretics (a warm bath, a vapor bath, heaters, liquor ammoniac acetatis, jaborandi, Dover's powder—the patient being in bed), may be salutary; the symptoms of prostration are to be treated by abundant stimulants. The menthol spray, or eucalyptus inhalations, stimulate the local circulation, and are perhaps germicides. The eucalyptus may be inhaled from a handkerchief, and a two to five per cent. of menthol in some form of liquid vaseline be injected into the nostrils in chronic catarrh.

There is no special treatment for the bronchitis of influenza. The acuteness of the attack, the oppression, the teasing, dry cough, the scanty expectoration of the first stage, indicate the need of expectorants and sialogines, whilst the prostration indicates the disadvantage of their administration. Ten drops of wine of ipecac, one drop of tincture of aconite, five grains of nitrate of potash in a dessert spoonful of liquor ammoniac acetatis, constitute a convenient mixture for this stage of the disease; the dose may be given every two hours during both day and night, or the tincture of lobelia inflata in five-minim doses may be substituted for the ipecacuanha wine. Citrate of potash in thirty-grain doses with lemon juice and syrup is a favorite combination, making a mixture which is very pleasant to take. No one will question the beneficial effects of hot fomentations and cataplasmas to the chest, especially when there is pain and dyspnoea. The old custom of giving an emetic at the onset of a severe bronchial attack has gone out of fashion, still there are times when nothing will so speedily relax the tightened

bronchi, allay the element of spasm and promote expectoration, as a full dose of ipecac or turpeth mineral. The latter emetic is especially applicable to children with abundance of sub-crepitant rales all over the chest, dyspnoea, and other symptoms of capillary bronchitis.

When expectoration has begun, and in influenza it sometimes does not begin at all, there is probably no better expectorant than carbonate or muriate of ammonia. The latter, if rubbed up with extract of licorice and taken in emulsion, in water or in syrup, is not especially disagreeable to the taste. The aromatic spirits of ammonia may be given in syrup of tolu or syrup of senega, and often no other expectorant will be needed. Marotte has recently published a paper in which he recommends, in order to oppose the pulmonary manifestations of *la grippe*, the employment of chloride of ammonium in doses amounting to two or three grammes daily. He would give the salt in capsules or cachets, the dose being fifty centigrammes.¹

As the adynamic symptoms are always marked, a supporting treatment should be instituted from the first, and alcoholic stimulants are frequently indicated. A tablespoonful of whiskey in a glass of milk is a favorite combination with many. Or the milk is given in teacups every two hours, and is alternated with a glass of grog or champagne. The alcohol often seems materially to aid expectoration besides combating restlessness and insomnia. It is especially in broncho-pulmonary cases complicated with weak heart and pulse that alcohol is a necessity. Physicians doubtless do not sufficiently utilize the stimulating and supporting effects of strong coffee, which may often be allowed to advantage in influenza *ad libitum*.

Where the cardiac enfeeblement is very marked, there can be no question as to the benefits of digitalis, strophanthus, caffeine, and sometimes of nitro-glycerine. In the pneumonia and broncho-pneumonia of influenza, the leading indication is often to support the struggling heart, and digitalis may be given here with often happy effects. An eligible form is the infusion, of which a teaspoonful may be given every two hours for a day or two, then strophanthus or caffeine may be substituted for the digitalis.

Many practitioners have great faith in sulphate of quinine, both as an abortive means in the early stages (abridging duration of the attack), and as a supporting agent all through the sickness. By general consent, however, quinine has of late been relegated to a secondary and subordinate place in the therapeutics of this and other affections, being given in rather small doses and for its tonic effect.

For the nervous symptoms of influenza, — the headache, the backache, the pains in the limbs, the restlessness and insomnia, etc., there seems to be nothing so good as acetanilid or phenacetin, and no medicines are more generally prescribed. Just how these medicines act is not yet known, but they certainly have a marked action in allaying the rheumatoid and neuralgic pains

¹ Bull. et Mem. de l'Académie de Médecine, June 16, 1891.

of influenza, and, they also combat the fever-element and relieve the insomnia. A recent writer in the *Lancet* even affirms that acetanilid is curative of the bronchitis, destroying the micro organisms that pervade the mucous membrane and the sputum; and that he has found it to cause the cough to disappear. Other practitioners may not have seen the same results, but there is abundant testimony that phenacetin or acetanilid are invaluable and safe medicaments in influenza. The former may be given in ten and the latter in five grain doses every two hours until the muscular or neuralgic pains cease; two or three doses generally prove sufficient. Some prefer to give stimulant with these drugs, as it hastens their action and counteracts any depressing effects. When the muscular pains are obstinate, salol, five grains, or salicylate of soda, fifteen grains, have been recommended.

A capital point in the treatment is to watch the patient, that he be not allowed to go out too soon, for cases are not rare where, after a light attack, exposure to cold has been followed by fatal pneumonia.

We can but just allude to Maclagan's treatment of influenza by salicine in large doses. This writer reports a series of cases which, he claims, go to show that salicine in doses of twenty grains every hour for five or six hours, then every two hours for a day "arrests the course of the disease as effectually as it does that of acute rheumatism when given in the same manner." In all his reported cases the cure was rapid, "the temperature falling to the normal, and convalescence commencing in all within twenty-four and in most within twelve hours of the commencement of the treatment."

BOMB-THROWING AND RESPONSIBILITY.

AT a meeting of the New York Society of Medical Jurisprudence and State Medicine, held January 10th, Dr. N. E. Brill, the President-elect, delivered his inaugural address, taking as a subject: "Some Medicolegal Reflections on Bomb-Throwing and Responsibility." As a safeguard against bomb-throwing and dynamite terrors, Dr. Brill advised a more stringent regulation of the manufacture and sale of explosives, and a restriction of the dissemination of pamphlets instructing the public how to make explosives. In the course of his remarks he urged the abolition of the "Anti-Kidnapping Society," through whose efforts he believed that a number of insane persons had been set at large. The title of this society, he said, was an insult to the medical profession, its members claiming that physicians were corrupt and open to bribes, and that they had sent patients to the insane asylum who were not lunatics. Such a society might, perhaps, have been a desirable organization in the Dark Ages, but its existence in the 19th century was an insult to the people and to the Government. He recommended that the form of committing the insane by magistrates to County or State asylums be taken away, and that all the insane arrested for a felony should be indicted by a

grand and go through the usual course of trial before a petit jury. If, at this trial, it should be proved that they were insane, they should be sent to the State Asylum for Insane Criminals. In the direction of reform he also recommended the transferring of the county asylums of New York and Kings Counties to the control of the State. It is doubtless true that for every sane man whose freedom is improperly or injudiciously interfered with, many lunatics are allowed to remain abroad who should be under restraint.

Incidentally Dr. Brill defended the electrical execution law, considering this the most humane method of execution yet devised. His conclusions, he said, were based upon his personal critical supervision of the recent execution of the murderer Loppy at Sing Sing prison, at which he acted as the representative of the Society of Medical Jurisprudence. It was his belief that the death was instantaneous and practically without any painful sensation to the criminal. The electric chair, however, was not yet perfect, and he advised that a special dynamo should be constructed for the infliction of the death penalty with a power of 2,500 volts.

MEDICAL NOTES.

PRIZE FOR AN ESSAY ON TUBERCULOSIS. — The Paris Société de Médecine offers a prize of 1,500 francs together with a gold medal, to the author of the best essay on tuberculosis before the end of 1892.

THE CREW OF THE BALTIMORE. — At the recent investigation of the attack on the *Baltimore's* crew in Chili, the naval surgeons testified that two of the sailors were killed, five seriously wounded and twelve received slighter wounds. The death of Turnbull was caused by neglect and bad treatment in the hospital where he was carried by the police. His death was due to septicaemia.

SUICIDE AMONG PHYSICIANS. — The Chicago *Tribune* notes as an interesting fact, not only that physicians headed the list of suicides last year, but that they have headed it every year in the last ten. This promises to be still more conspicuous this year, as in the first twelve days of the present month no less than seven physicians have committed suicide in the United States.

FAILURE OF AN OSTRICH'S DIGESTION. — The death of a well-known ostrich belonging to a circus is reported from Cincinnati as having been due to influenza. At the post-mortem a diamond pin, of the value of \$800, was found pinned in his stomach. The pin had been picked last summer from a gentleman's shirt front in Montreal.

HORSE-FLESH FOR FOOD. — The United States Bureau of Animal Industry has discovered that horse-flesh in large quantity is being shipped to Europe from a place on Long Island, N. Y. Some of it is supposed to pass there as beef, and part of it is used for making sausages, which are then sent back to this country.

NEW HEALTH DEPARTMENT IN LONDON.—The act of Parliament establishing a public health department for the city of London went into force the first of the year. This is the first time that a city has had a department attending solely to matters of health.

POST-MORTEM CONVICTION.—According to the *Medical Press*, a French soldier, finding himself accused of having stolen some gold coins, swallowed them. He escaped conviction, but shortly afterwards became sick and died from acute indigestion. At the autopsy, twenty-one coins were found in his stomach.

THE SPREAD OF SMALL-POX IN CANADA.—Surgeon Spencer C. Devan, of the Marine-Hospital Service, having been sent to Canada to investigate the recent epidemic of small-pox, has submitted a very interesting account of his investigation to the Marine Hospital Bureau. The disease is believed to have been brought into Quebec by the steamship *Brazillian*, last June. On her way to Montreal she stopped at Quebec for four hours. She had had several cases of small-pox on her voyage from London. On the 1st of August, a patient who had been in the hospital in Quebec for more than eight months was found to have small-pox, probably brought to the hospital from the steamer by a seaman. Both of the nurses who had attended this seaman contracted small-pox, one of them was taken to her home and gave the disease to a nurse-girl named Bujold. The girl, as soon as the eruption appeared, started for her home in Carleton. In order to get there she had to go by rail for some distance and the remaining part of her journey by steamboat. A large part of the small-pox epidemic appears to be directly due to this journey. Being alone and sick, a number of persons both on the train and the steamboat offered her assistance and from her contracted small-pox which was carried into their native towns. One family returning, after an absence of two years, sat with this girl in the train for some time. When they arrived at their destination, they were given a reception by their friends and relations, and succeeded in spreading the disease pretty thoroughly in that town. Investigating the different outbreaks, a direct clue was found in several instances showing that the infection came originally from the girl Bujold.

NEW ENGLAND.

MORTALITY OF BOSTON FOR THE WEEK.—During the past week fourteen deaths were recorded as being due to influenza alone, and thirty as indirectly due to it. The total number of deaths was 286, making the death-rate for the week 32.3. Of this number deaths due to diphtheria were 9, scarlatina 5, consumption 26, pneumonia 74, heart disease 21, and bronchitis 31. The number of persons who died over sixty years of age was 92.

BOSTON NURSES' CLUB.—A Nurses' Club has been recently organized in connection with the Training-school for Nurses at the Boston City Hospital. At the meeting for organization, Dr. G. H. M. Rowe,

Superintendent of the Hospital, stated that the aim of the club is to give a wider intelligence in the practice and ethics of nursing; a better knowledge of the three departments of hospital, private and district nursing; the stimulus that results from interchange of opinion and experience; the promotion of social acquaintance and an *esprit de corps* between the past and the present members of the school.

RECENT APPOINTMENTS.—At the last meeting of the Board of Overseers of Harvard College the following appointments were confirmed: George Wells Fitz, M.D., instructor in physiology and hygiene for 1892-93. Henry Fiske Leonard, M.D., M.D.V., instructor in anatomy in the Veterinary School for the remainder of the year 1891-92. Kenelm Winslow, M.D.V., M.D., assistant professor of veterinary therapeutics for five years from September 1, 1892.

HOTEL-KEEPERS MUST SELL PURE MILK.—By a recent decision of the Supreme Court of Massachusetts, the selling of impure milk by hotel-keepers is punishable under the same statute which applies to milk dealers in general.

NEW YORK.

THE NEW YORK TRAINING-SCHOOL FOR NURSES.—The nineteenth commencement of the New York Training-school for Nurses attached to Bellevue Hospital was held on January 12th, when a class of thirty was graduated. The report of the Secretary gave the annual statistics of the institution, and stated that during the year the Edith Sumner Home for the relief of the hard-working nurses had been opened, and also that four rooms had been built over the Marquand pavilion, at Bellevue, for the special use of nurses who were taken ill while on duty. The address to the graduates was delivered by Dr. Frederic S. Dennis.

MORTALITY FOR THE WEEK.—During the week ending January 9th, the total number of deaths reported in the city was 972, and the number of deaths from influenza and complications, 89. This is the largest mortality reached during the present rather mild epidemic, and since then there has been a considerable reduction in the number of deaths.

THE ADIRONDACK PARK.—The annual report of the State Board Commissioners just presented to the Legislature, shows that there has been an increase of about 15,000 acres in the extent of the Adirondack preserves during the year, partly under the provisions of the act of 1890, appropriating \$25,000 for the purchase of land at not more than \$1.50 per acre. If a further appropriation is made about 50,000 acres additional can at once be purchased at the same rate. The report speaks at length of the legislation necessary for the proposed establishment of a State Adirondack Park, and states that there is a universal demand for this park by the press and people of the State. The original idea called for forest preservation, with reference only to protecting the head-waters of the rivers, and to providing a future economical and perpetual timber supply; but lately the acquisition of

this territory has been urgently demanded by the medical profession and the public for the purposes of a health and pleasure resort.

THE STATE BOARD OF MEDICAL EXAMINERS met at Albany on January 15th, and seventeen out of the twenty-one members composing it were present. Since the new medical law went into effect, September 1st, 1891, nineteen persons have applied for licenses to practice medicine in the State, two-thirds of whom were graduates of foreign universities. Eight persons have presented themselves for examination, and of these seven passed. The second examination of candidates for license to practice will be held in the cities of New York, Albany, Syracuse and Buffalo, on January 26, 27, 28 and 29.

INSANITY IN THE STATE.—The annual report of the State Commissioners in Lunacy, which is now in course of preparation, shows that during the year ending October 1, 1891, 827 insane patients were transferred from county institutions to the State hospitals. This leaves 1,215 insane still in the county institutions of those counties not exempt from the provisions of the State Care Act; but within a few months it is expected that they will all be transferred to the State hospitals, as the construction of the necessary new buildings at the different hospitals will have been completed by the 1st of October, 1892. During the year there was an increase of 345 in the total number of insane patients.

Miscellany.

MENTAL SYMPTOMS AFTER SURGICAL OPERATIONS.

KIERNAN cites a formidable list of authorities from Ambrose Paré to Horatio Wood, showing a profound nervous effect produced by operation.¹ He has found 186 cases of profound mental change following operation; 35 cases after operation for cataract; 65 following gynecological operations, and the remainder resulting from plastic operations, amputations, manipulations, etc. In 15 cases there was larvated epilepsy precedent to the operation; in 10 hysteria major was present; in 30 cases a neurotic element existed; in 35 cases the patients have arrived at periods of involution when instability of the nervous system usually results. In 10 cases only was the influence of blood-poisoning demonstrated.

The acute types of mental affection following operation are aptly designated as "acute confusional insanity." In the larvated epileptic cases, the neurotic, and the hysterical, the prognosis is good. In some of the cases occurring at periods of involution senile degenerations are precipitated. The majority of blood-poisoning cases died. Typho-mania is sometimes observed.

The moral treatment of the patient precedent to the operation is the best prophylaxis. If to the dread of the operation be added dread of the operator the nervous perturbation will necessarily be far greater. Sedatives and other measures tending to calm agitation are ne-

necessary. Quinine is strongly indicated. Opium and not chloral hydrate or the bromides will, as a rule, be found a most valuable aid in most of the cases. In many of the hysterical cases salix nigra and monobromate of camphor give good results.

INFANTILE ATAVISM.

DR. LOUIS ROBINSON,² taking advantage of the material furnished by the maternity ward of an English work-house, has studied certain peculiarities of newborn babies, which he thinks may, by the theory of evolution, throw light upon the origin of the human race. As the young of certain anthropoids are obliged to cling to their mothers or to trees, he tested the clinging power of young infants, and found that they all had a very durable grasping power, and that the strongest were able to hang by their hands and support their whole weight for over two minutes and a half. The author considers that the amount of strength in the flexors of the hand and fingers in newly-born children is best explained by its being a survival from the tree-climbing period of man's history. The effort made by infants to curl their toes over anything, he ascribes to the same origin. Another point is the flexed state of the thighs. Other animals, although twisted and cramped in the egg or the uterus, adopt the position of adults as soon as they are born, whereas the thighs of young infants seem to assume the position existing in apes.

As a criticism of the theory that the disproportionate size of the anterior half of the body of the human fetus is due to better nourishment by the fetal circulation, he calls attention to the large hind quarters of new-born quadrupeds. A suggestion is made that the axillary and pubic hair in the adult human being, may be partly accounted for as the remnants of handles, to which our four-handed ancestors clung in their infancy.

THE MEDICAL DEPARTMENT OF THE ARMY.

A CIRCULAR of information has been issued by the Surgeon-General for medical men who may be desirous of entering the United States Army Medical Department.

The medical department of the army consists of one surgeon-general with the rank of brigadier-general; one assistant surgeon-general, one chief medical purveyor and four surgeons with the rank of colonel; two assistant medical purveyors and eight surgeons with the rank of lieutenant-colonel; fifty surgeons with the rank of major; and one hundred and twenty-five assistant surgeons with the rank of first lieutenant of cavalry for the first five years of service, and of captain of cavalry subsequently until their promotion by seniority to a majority.

With the rank stated in each case the pay and emoluments of the rank are associated. For the first five years the medical officer receives \$1,600 per year. He then receives \$2,200 a year, which increases with length of service and promotion.³ Compulsory retirement at the age of sixty-four years increases the rapidity of promotion to the younger men; and when retirement is effected either by age, or by the accidents

¹ American Journal of Medical Sciences, December.

² British Medical Journal, December 5, 1891.

of service prior to reaching the retiring age, the rate of pay subsequently drawn is seventy-five per cent. of the total salary and increases of the rank held by the individual at the time of his retirement. The medical officer has the right of selecting quarters in accordance with his rank. The authorized leave of absence amounts to thirty days annually. This leave is not forfeited if not taken during the year.

A commission in the Medical Department of the Army is an instrument which is good for life, premising conduct consistent with its retention on the part of its possessor; but it involves no contract which binds the individual to service for any given number of years.

A young medical officer on appointment is usually assigned to duty for a few months at some large post. After this he goes to some post west of the Mississippi river, where he serves a tour of duty of four years. An assignment in the east follows the leave of absence which is usually taken at this time; and in after years his stations are selected so as to give him a fair share of service at what may be called desirable posts as an offset to the time spent at less desirable stations.

Instructions for candidates for the service will be found on page 720 of the JOURNAL of December 31st.

An Army Board meets every few months for the examination of candidates, who must be between twenty-one and twenty-eight years of age (without any exceptions), and graduates of a regular medical college, evidence of which, the diploma, must be submitted to the Board. The physical examination is rigid; and each candidate is required to certify "that he labors under no mental or physical infirmity, nor disability of any kind, which can in any way interfere with the most efficient discharge of any duty which may be required." Oral and written examinations on subjects of preliminary education, general literature, and general science are required as well as on different medical subjects. Clinical examinations, medical and surgical, at a hospital, and the performance of surgical operations on the cadaver form a part of the examination. An applicant failing in one examination may be allowed a second after one year, but not a third.

DR. BUCKMINSTER BROWN.

AT a meeting of the Boston Society for Medical Improvement, held January 11, the following action was taken, on motion of Dr. Francis Minot:

In taking official notice of the death of Dr. Buckminster Brown, the Society desires to record its high estimation of his personal character and professional eminence, and its regret at the loss of one of its oldest and most respected members.

Although compelled by ill-health from his youth to lead a life of extreme care and regularity, and unable to undergo the fatigues of general practice, Dr. Brown succeeded by his industry and perseverance in attaining a large practice in orthopedic surgery, of which he became one of the most distinguished representatives, both in this country and abroad.

The Society respectfully offers its sincere sympathy to the family of Dr. Brown in the affliction which they have sustained by his loss.

Dr. E. H. Bradford being unavoidably absent, the following was read for him by Dr. E. G. Brackett:

To Dr. Buckminster Brown belongs the credit of having introduced into this country the best of the English school

of orthopedic surgery (at that time the leading and most active school), and of having placed this specialty in America on a most excellent foundation. But he was in no true sense a follower, as his mind worked independently; in many of his methods he was bolder than many of his English contemporaries; and in thoroughness and persistency he equalled and surpassed his teachers.

Conservative by nature, too scholarly and well trained to accept without cautious reserve brilliantly announced cures and speedily successful procedures in the treatment of affections essentially chronic, he relied chiefly upon the painstaking measures which aid and cure through daily attention. Although he relied chiefly upon appliances in the treatment of deformity, he had the instincts of a surgeon and believed in operative methods wherever it was proved that operation was beneficial. He, by no means belonged to the more timid school of orthopedic surgery, which shuns operation, though his experience was chiefly limited to non-operative procedures. The methods which he worked in, have, in the progress of surgery, in some instances been superseded; but his work in club-foot, in tenotomy, in infantile paralysis, in correction of right-angled contraction at the hip and knee-joint, and especially in the cure of congenital dislocation, by long-continued traction and manipulation, will always be of value in orthopedic surgery.

His tastes were essentially scientific in the best sense, and his work is characterized by a tenacity of purpose and a persistency not to be surpassed; and to whomsoever he was bound by the contract of professional duty he gave his whole attention and ability with untiring zeal, and that in spite of obstacles in the lack of physical vigor which none could appreciate who did not know him. He husbanded his resources carefully and spent them lavishly in his work.

Besides his achievements he left as a legacy to his successors an example of loyalty to purpose, unremitting persistency, and a courage always superior to the obstacles and limitations surrounding his life.

THERAPEUTIC NOTES.

WARM ETHER.—Dr. Partagás, of Barcelona, has introduced an apparatus for keeping ether at a temperature of eighty-eight degrees during its administration. He claims that anesthesia produced by warm ether is much more satisfactory and may be continued for a longer time than by the cold vapor.

TINCTURE OF IODINE.¹—A good plan to prevent the spilling of iodine solutions is to fill the bottle with absorbent cotton, pouring in the solution to complete saturation and emptying all superfluous liquid. Enough remains to saturate any brush, etc., that may be thrust into the bottle, yet the bottle may be carried about without any risk of leakage or spilling.

ANTISEPTIN.²—Radlauer considers antiseptin, introduced by him into therapeutic use as a chemical combination, and denominates it the iodo-borothymolite of zinc. But analysis of this substance by F. Goldmann shows that it is not a definite chemical compound, but only a mixture of iodide of zinc, thymol, boric acid, and sulphate of zinc. The proportions are as follows:

B Zinci sulphatis	85 parts
Zinci iodidi)	
Thymoli }	85 2/3 parts
Acidi borici	10 parts M.

METHYL BLUE FOR NEURALGIA.—Immerwahr³ has tested the action of methyl blue in different forms of neuralgia. No unpleasant effects have been observed. The substance is given in doses of from one

¹ Medical Press.

² Satellite, January.

³ Deutsche med. Woch., No. 41 1891.

and a half to three grains, three times a day. The results were good in case of trigeminal neuralgia, also in nervous headache and depression from alcohol. In two cases of herpes zoster the great pain was much relieved.

Correspondence.

THE BI-CHLORIDE OF GOLD FRAUD.

BOSTON, January 19, 1892.

MR. EDITOR:—Not far from a century ago the civilized world was ringing with the praises of "Perkinism." The story is old and oft-repeated, but will bear a brief retrospect.

Elisha Perkins, then living in Connecticut, had introduced to public notice his "tractors" or "pullers-out-of-disease," with which he cured many cases of rheumatism, gout, and disorders of the nervous system, by the application of these tractors to the body. The apparatus consisted of two pieces of metal (brass and steel) highly polished, to appear like gold and silver. They were made in a small village near New Haven at a cost of twelve and a half cents a pair, and were sold by Perkins for twenty-five dollars. Perkinism spread rapidly, and soon made its appearance in England, where a Perkinian Institute was founded, and reports of 5,000 cases were published. Certificates were obtained from the highest sources, and Perkins soon found himself the possessor of a fortune.

The Archbishop of Canterbury was implored to compose a new prayer, to be used in all the churches, that no evil powers might be allowed to impede the magic workings of the estimable gift of Perkins.

Fessenden celebrated the discovery in the following rhyme:

" See pointed metals bleed with power to appear
The ruthless rage of merciless disease;
O'er the weak part a subtle fluid pour,
Drenched with invisible galvanic power,
Till the palsied, staff and crutch forego,
And leap exulting, like the bounding roe."

The exposure of the Perkins fraud was the work of two physicians, who substituted two bits of painted wood, made to resemble the metallic tractors. With these they wrought many marvellous cures, and published a volume of reports upon them. When the true character of these substitute tractors became known, Perkinism was no more.

About twenty years ago several "opium-cures" made their appearance, some of which were also proclaimed as remedies for the alcohol habit. The proprietor of one of these nostrums was arrested for alleged complicity in the Robin Hooding cases at Somerville; another was a vendor of obscene literature in Chicago; still another was the notorious proprietor of the "Scotch Oats Essence,"—a preparation which immediately died a natural death as soon as its true character was made known.

All these articles contained opium or morphia in some form as their active ingredient, and depended for their success upon the fact that the purchasers, instead of being patients, as they innocently believed themselves to be, soon became the victims of the rascals who advertised these nostrums, and thus succeeded in getting the deluded victims into their net. It was a modern version of the old fable, "Will you come into my parlor, said the spider to the fly?"

Then came the "double chloride of gold cure," as it was at first named, as fraudulent as all the rest of the tribe, in that it contained no gold whatever. As the chemist who analyzed the samples for the State Board of Health said, "It gave no reaction for the presence of even a trace of gold therein." With this fact in view, the motive for calling it a "gold-cure" becomes sufficiently evident.

The fraudulent character of these articles was first

shown up by the Cumberland County Medical Society of Maine, and again by the Middlesex East Medical Society of Massachusetts, and still later by the State Board of Health of Massachusetts in its report for 1885, in which it was stated that twenty different "cures" for the opium and alcohol habits were examined by the chemist of the Board, and all were found to be of a fraudulent character.

The "cure" of a confirmed inebriate requires something more than drugging, either by the stomach or by hypodermic injection, or otherwise. The report of the State Board of Health, already referred to, says on this subject, "A cure must of necessity combine a treatment which deals with the entire physical and moral nature of the sufferer, and must be more thorough and far-reaching than any mere system of therapeutic drugging can possibly accomplish."

All of these parties publish long lists of endorsements from statesmen, clergymen, lawyers, physicians and business men. As a sufficient comment upon this fact, the history of all patent nostrums shows that the obtaining of endorsements is a very easy matter. As a matter of fact, there is also abundant evidence that in many cases the endorsements were fraudulently obtained.

When some bright young medical man shall stily substitute a harmless placebo, in place of the usual "bi-chloride" treatment, and "cure" his patients with the substitute as successfully as Keeley professes to have done, the bi-chloride castle of this century will tumble to the ground, like the Perkinism of 1796, and be known only as a thing of the past.

Very truly yours,

S. W. ABBOTT, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 2, 1892.

CITIES.	Estimated population for 1890 ^a	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Aetic lung disease.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York	1,515,201	969	322	13.18	30.29	4.42	—	6.50
Chicago	1,069,556	736	236	19.38	23.8	2.31	7.69	5.61
Philadelphia	1,046,364	718	267	13.16	24.92	1.96	.56	9.10
Brooklyn	806,345	470	125	16.92	27.51	2.31	.21	6.72
St. Louis	631,211	380	120	31.58	33.75	—	—	—
Boston	446,477	318	64	5.80	35.96	1.55	.31	3.41
Albany	434,439	310	89	8.96	26.36	4.16	.64	2.88
Cincinnati	296,908	204	53	9.80	14.70	1.47	.49	6.37
Baltimore	282,000	176	22	22.88	12.87	1.43	1.43	15.73
Cleveland	242,000	162	42	26.16	11.52	—	4.80	15.30
New Orleans	240,000	104	42	20.16	11.52	—	—	—
Milwaukee	240,000	89	41	32.48	10.08	2.24	4.48	20.28
Washington	230,392	133	29	4.50	30.75	—	.75	1.50
Nashville	76,168	36	8	23.4	19.56	—	—	—
Charleston	65,300	42	17	2.38	16.6	—	—	—
Portland	50,425	26	5	—	35.60	—	—	—
Worcester	84,655	55	20	16.92	25.48	1.82	—	5.46
Lowell	77,696	63	14	4.71	20.41	—	—	1.57
Fall River	74,388	48	19	10.41	20.83	—	4.16	2.08
Cambridge	70,028	45	10	4.44	38.86	—	—	2.22
Providence	64,654	53	14	26.42	18.86	1.56	—	—
Lawrence	64,654	53	14	18.86	18.86	1.56	1.89	7.56
Springfield	44,179	41	9	7.32	41.48	—	—	7.32
New Bedford	40,733	34	9	2.94	17.64	—	—	2.94
Salem	30,801	18	2	5.26	18.78	8.26	—	—
Chelsea	27,998	18	8	7.78	17.78	—	—	7.14
Haverhill	27,412	30	6	6.66	10.00	—	—	6.66
Faunton	25,445	17	5	—	11.76	—	—	—
Glocester	24,651	6	1	—	33.33	—	—	—
Newton	24,375	14	—	7.14	21.42	—	—	7.14
Quincy	22,037	12	2	—	25.00	—	—	—
Plymouth	22,037	14	4	—	25.00	—	—	—
Waltham	18,707	6	1	—	50.00	—	—	—
Pittsfield	17,281	6	3	—	33.33	—	—	—
Quincy	16,723	8	0	—	37.50	—	—	—
Newburyport	15,949	13	0	—	30.76	—	—	—
Marlboro	11,079	6	2	—	50.00	—	—	—
Clinton	10,424	—	—	—	—	—	—	—
Hyde Park	10,193	9	2	11.11	44.44	—	—	11.11
Peabody	10,158	2	0	—	—	—	—	—

Deaths reported 4,578: under five years of age 1,388; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 369;

^a Dr. J. C. Peters, article on "Thompsonianism" in Wood's Reference Handbook of the Medical Sciences, Vol. VII.

acute lung diseases 1,057, consumption 388, influenza 302, diphtheria and croup 282, scarlet fever 102, typhoid fever 77, diarrhoeal diseases 47, measles 21, whooping-cough 14, cerebro-spinal meningitis 13, erysipelas 6, malarial fever 6.

From diarrhoeal diseases New York 13, Chicago 12, Philadelphia 5, Cincinnati 3, Baltimore, Milwaukee, Nashville and Lowell 1 each. From measles New York 13, Philadelphia and Brooklyn 2 each, Chicago, Baltimore, Milwaukee and Fall River 1 each. From whooping-cough New York 4, Philadelphia 3, Cleveland 2, Chicago, Boston, Baltimore, Milwaukee and Fall River 1 each. From cerebro-spinal meningitis Chicago 6, New York, Washington and Worcester 2 each, Nashville 1. From erysipelas New York 4, Chicago and Brooklyn 1 each. From malarial fever Brooklyn 3, New York, Philadelphia and Charleston 1 each.

METEOROLOGICAL RECORD.

For the week ending January 2, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Date.	Baro-meter		Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S. -27	29.94	32	38	33	49	62	W.	W.	20	8	C. O.	O.	.03
M. -28	30.32	32	36	27	61	51	N.W.	N.E.	8	7	C. C.	C.	
T. -29	30.20	35	47	39	72	86	S.E.	79	15	30	O. E.	E.	.01
W. -30	30.20	32	36	27	56	96	N.W.	N.W.	30	10	R. R.	R.	
T. -31	30.34	44	24	32	78	82	N.W.	N.W.	19	18	G. O.	O.	.12
F. -1	30.34	35	41	25	53	41	N.W.	S.	4	9	C. C.	C.	
S. -2	29.73	45	55	35	78	86	S.	S.E.	13	39	R. R.	R.	.73
S.P.	30.10	35	42	28	62	61	62		11	12			.28

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threat. ening; N., snow. + Indicates trace of rainfall. — Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 9, 1892, TO JANUARY 15, 1892.

CAPTAIN HENRY S. KILBOURNE, assistant surgeon, U. S. A., is relieved from duty at Willet's Point, N. Y., and will report in person to the Sup't. U. S. Military Academy, West Point, N. Y., for duty at that station, relieving CAPTAIN W. FITZHUGH CARTER, assistant surgeon, U. S. A. Captain Carter, upon being relieved by Captain Kilbourne, will report in person to the commanding officer, Willet's Point, N. Y., for duty at that station.

MAJOR JULIUS PATZKE, surgeon, having been found by Army Retiring Board incapacitated for active service on account of disability incident to the service, is by direction of the President, retired from active service, to take effect January 19, 1892, under provisions of Section 1251, Revised Statutes.

Leave of absence for one month is granted CAPTAIN WALTER W. R. FISHER, assistant surgeon, U. S. A.

CAPTAIN MARSHALL W. WOOD, assistant surgeon, U. S. A., now on leave of absence, will report to the commanding officer, Fort Columbus, N. Y., for temporary duty at that post during the absence of CAPTAIN W. W. R. FISHER, assistant surgeon, U. S. Army.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 16, 1892.

J. PARKER, surgeon, ordered to the U. S. S. "Charleston." C. H. WHITE, medical inspector, detached from U. S. S. "Charleston" and ordered home.

GEORGE A. LUNG, assistant surgeon, ordered to examination for promotion.

PATRICK H. BRYANT, assistant surgeon, ordered to examination for promotion.

LUTHER L. VON WEDEKIND, assistant surgeon, ordered to examination for promotion.

THE INTERNATIONAL EXECUTIVE COMMITTEE OF THE PAN-AMERICAN MEDICAL CONGRESS.

The Committee on Organization of the Pan-American Medical Congress at its meeting at St. Louis, last October, elected the following International Executive Committee: The Argent-

ine Republic, Dr. Pedro Lagleyze, Buenos Ayres; Bolivia, Dr. Emilia Di Fonseca, La Paz; Brazil, Dr. Carlos Costa, Rio de Janeiro; British North America, Dr. James F. W. Ross, Toronto; British West Indies, Dr. James A. De Wolf, Port of Spain; Chile, Dr. Moises Amaral, Santiago; United States of Colombia, Dr. P. M. Ibañez, Bogota; Costa Rica, Dr. Daniel Núñez, San José; Ecuador, Dr. Ricardo Cucañon, Guayaquil; Guatemala, Dr. José Monteris, Guatemala Nueva; Hayti, Dr. D. Lamotte, Port au Prince; Spanish Honduras, Dr. George Bennett, Tegucigalpa; Mexico, Dr. Tomas Nunez, Ciudad de Mexico; Nicaragua, Dr. J. L. Uriarte, Grenada; Peru, Dr. J. Casamira Ulloa, Lima; Salvador, Dr. David J. Guzman, San Salvador; Spanish West Indies, Dr. Juan Santos Fernandez, Habana; United States, Dr. A. Vander Veer, Albany, N. Y.; Uruguay, Dr. Jacinto De Leon, Montevideo; Venezuela, Dr. Elias Roden-guez, Caracas.

Hawaii, Paraguay, Santa Domingo, the Danish, Dutch and French West Indies are not yet organized. Nominations of local officers have been received from a majority of all the members of the International Executive Committee and a number of the lists have been confirmed by the Committee on Organization. These will be announced as rapidly as acceptances are received.

CHARLES A. L. REED, *Secretary-General.*
Cincinnati, January 15, 1892.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held at M. M. May, January 25, 1892, in the Medical Library, 19 Boylston Place, at 8 o'clock p. m.

Dr. A. L. Mann, "Notes on Typhoid Fever" from 670 Cases at the Boston City Hospital in 1890 and 1891."

Dr. C. L. Sudler, "The Management of Compound Dislocations of the Ankle-Joint."

Dr. G. W. Gay will report some Cases of (Esophagotomy).
G. G. SEARS, M.D., *Secretary.*

RECENT DEATHS.

CHARLES MARTIN, M.D., Medical Director, United States Navy, died in New York, January 14th. He was appointed assistant surgeon in 1848; surgeon in 1861, and Medical Director in 1873. He was wrecked on the coast of Patagonia in 1851 and remained there some months. He was on the Camberland in 1862, when she was sunk by the Merrimac, and on the Mohican, during both attacks of Fort Fisher. He was retired in 1884.

JOHN GEORGE METCALF, M.D., M.M.S.S., died at Mendon, January 13th, aged ninety years. He graduated from Brown University in 1822. In addition to an active practice, he held several positions of trust and importance, among them being that of State Senator, in 1858 and '59.

HENRY INGERSOLL BOWDITCH, M.D., M.M.S.S., died in Boston, January 14, 1892, aged eighty-three.

BERKELEY HILL, F.R.C.S., Vice-president of the Royal College of Surgeons; Professor of Clinical Surgery at University College, died in London, January 7th.

BOOKS AND PAMPHLETS RECEIVED.

Shorthand and Type-Writing. By Dugald McMillan. New York: Fowler & Wells Co. 1891.

Gymnastic Exercise as a Prophylactic and Curative Remedy in Chest Diseases. By Edward O. Otis, M.D., Boston, Mass. Reprint. 1891.

Diagnosis and Treatment of Hemorrhoids and other Non-Malignant Rectal Diseases. By W. P. Agnew, M.D. Second edition. San Francisco. 1891.

Jacksonian Epilepsy: Trephining: Removal of Small Tumor and Excision of the Cortex. By Charles K. Mills, M.D., and W. W. Keen, M.D., Philadelphia. Reprint. 1891.

Surgical Anatomy for Students. By A. Marmaduke Sheld, F.R.C.S., Assistant Surgeon, Charing Cross Hospital. New York: D. Appleton & Co. 1891.

Considerations upon Medical Hemorrhage Surgically Treated, With a Successful Case, by a New Technique of Saline Infusion for Severe Hemorrhage. By Robert H. M. Dawbarn, M.D., New York.

Botany. A Concise Manual for Students of Medicine and Science. By Alex. Johnstone, F.G.S., Lecturer on Botany, School of Medicine, Edinburgh. New York: D. Appleton & Co. 1891.

Physical Diagnosis. A Guide to Methods of Clinical Investigation. By G. A. Gibson, M.D., D.Sc., F.R.C.P., and William Russell, M.D., F.R.C.P., of Edinburgh. New York: D. Appleton & Co. 1891.

Original Articles.

CONGENITAL DISLOCATION OF THE HIP.¹

BY A. M. PHELPS, M.D., NEW YORK.

SOME two years ago, Dr. John Ridlon, of New York, reported a case of congenital dislocation of the hip, the head of the bone resting on the pubes. This dislocation forward and upward is unusual. However, within a year two other cases came to my clinic at the Post-Graduate Medical School and Hospital, with the same deformity.

The deformity in each case was precisely the same. They were, in fact, anterior and upward congenital dislocations of the head of the femur. The child, illustrated in this article, had always been healthy; there was no history of injury in the case; nor of any severe labor. The mother noticed that when the child began to walk, one leg was shorter than the other, and that the feet and toes were turned out. Figs. 1 and 2 are cuts made from photographs taken of the case when first seen. They show the outward rotation and shortening seen in anterior dislocation. The case was three years old when I first saw it. I applied a long traction splint, which the child wore for a year and a half, when it died from acute meningitis. A post-mortem was permitted, and I have the specimen here, which, with your permission, I will now present.

Figs. 3 and 4 are drawings of the specimen made by Dr. Macdonald, and they very correctly represent the pathological condition found.

In the first specimen the head of the bone is seen above the rim of the acetabulum, dislocated upward and forward. The capsule of the joint is cut away to give the view.

In Fig. 4 the acetabulum is seen to be angular in shape, small and undeveloped, with the remains of the ligamentum teres. This specimen is of great interest, I believe, because, so far as I know, it is the only pathological specimen of anterior congenital dislocation of the hip reported, and it will be found of great value in studying the etiology of this deformity. It will be observed that the pressure of the head of the bone has changed the form of the anterior border of the acetabulum from concave to convex.

Etiology. — It has been taught, and it is accepted by the profession generally in America and in England, that congenital dislocation of the hip is a secondary condition, depending upon the non-development of the acetabulum.

This specimen is surely a case of congenital dislocation primary, with non-development of the acetabulum from non-use.

I am not prepared to say that all cases are like this, but surely here is a case of congenital dislocation *in utero* not due to non-development of the acetabulum.

Dr. Cornigan, who, by the way, has written an excellent monograph on this subject, believed that the dislocation was a primary one, due to reflex spasm of the muscles *in utero*, caused by some central nerve lesion in early fetal life.

A glance at the anatomy of the hip-joint will show that the muscles pass diagonally across the body from the shaft of the femur to the pelvis, being in a line with the axis of the neck of the femur.

It seems to me that dislocation of this bone could not take place by the contraction of these muscles, but, on the contrary, that contraction of the glutei muscles

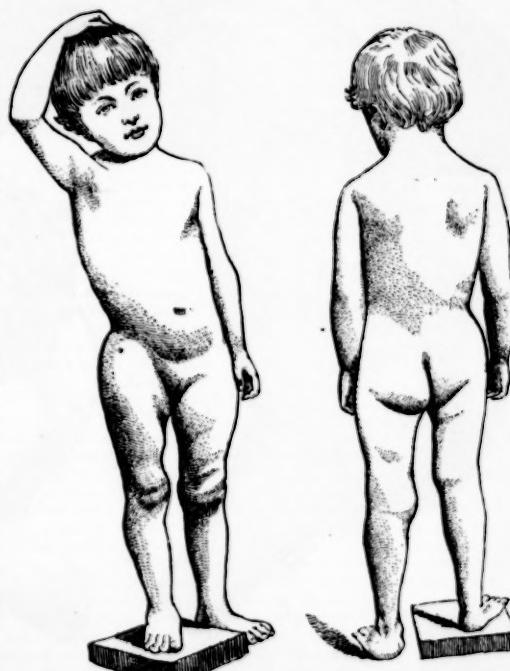


FIG. 1.

FIG. 2.

or of any of these groups, would tend to press the head of the bone more firmly into the acetabulum. A long continued spasm of muscles, sufficient to cut away the acetabulum, would destroy the head of the bone and produce a true inflammatory disease of the hip-joint.

Heredity, no doubt, has much to do with producing this deformity. Dupuytren relates the history of a case — Marguerite Cardas — who had two aunts on the maternal side, affected with lameness from their earliest attempt at walking. Marguerite's father had,

¹ Read before the American Orthopedic Association at Washington, D. C., September 23, 1891.

a sister lame from birth on the right side, who died at eighty years of age. Another sister, well formed, gave birth to a child with shortening of the right inferior extremity. This woman has a daughter by a healthy man with three inches of congenital shortening of the right leg. This girl also married a healthy man, but his father had a congenital dislocation of the right femur. She has had four children, two of whom present the hereditary infirmity.

Similar cases are numerous, and it will be difficult to doubt that hereditary predisposition exerts some in-

germ, or the operation of the formative power (by Dupuytren). This hypothesis has no support in embryogeny.

(2) Arrest of development of the cotyloid cavity. The pathological specimen here presented was certainly not produced by this cause.

(3) Certain articular maladies occurring in the fetus during intra-uterine life. No doubt diseases of the joint might occur which would produce a diastasis or even the destruction of the acetabulum, leading to a dislocation.



FIG. 3.



FIG. 4.

fluence over the recurrence of this deformity in children whose parents or ancestors have been affected by it.

Ambrose Paré, 1678, Book 16, page 347, says of hereditary causes: "Such as parents transfuse into their offspring, hence it is that crooked, not necessarily, but oftentimes, are generated by crooked, and lame by lame."

Also, "Hippocrates himself avers that infants in the very womb may have their joints dislocated by a fall, a blow, or compression."

Among the other causes enumerated, are:

(1) An original defect in the organization of the

(4) Diseases of the primitive nerve centres are said to cause a perverted condition of the excito-motor apparatus of the medulla spinalis, producing a spasm of the muscle, and resulting in dislocation. This is the favorite theory of Dr. Cornigan and M. Guerin; but I have already stated that the anatomy of the joint is such that muscular spasm, independent of other causes, could not produce dislocation of the hip. It is true that in anencephalus fetal monsters, congenital dislocation of the hip, club-foot, and other deformities are found, but there must be other pathological conditions present favoring these deformities, because many of

those monstrosities have no deformity of the extremities whatever.

It seems to me that if spasm of the muscle *in utero* produces dislocation of the hip, it ought always to produce it in the same direction, but we find that the usual form is upon the dorsal of the ilium, and this specimen which I present is one upward and forward, and Dr. Cornigan says that the dislocation may take place downward and forward, or downward and backward.

These facts, together with the peculiar anatomy of the hip-joint and the direction in which the muscles operate upon the femur, lead me to believe that this is not one of the causes *per se* of congenital dislocation of the hip.

A few years ago I saw a child one hour after it was born. The right limb was an inch shorter than the left, and there was a dislocation upon the dorsal of the ilium. I manipulated the limb in the usual method and reduced the dislocation, and the head remained in place without a retaining apparatus. This was clearly a case of dislocation which had taken place during confinement. If the deformity had not been noticed until the child began to walk, any physician would have said that this was a case of congenital dislocation of the hip.

Mr. C. B. Lockwood presented at the London Pathological Society two specimens of infants illustrating the absence of the margin of the acetabulum, with and without displacement of the head of the femur. (See *Transactions* of that Society, vol. xxxviii, page 303, 1887.)

The first case is one of microcephalic fetus, probably born at full term; a case of double-breach presentation, and after birth the thighs remained flexed upon the abdomen. The pelvis was quite well formed, with the exception of the acetabulum. The cartilaginous rim of that socket was entirely absent, otherwise the joint was normal. The capsule was capacious; the ligamentum teres longer than usual. The head of the femur was normal, lying upon a flat surface.

The second case shows absence of the margin of the acetabulum, with displacement of the head of the femur upon the dorsum of the ilium. This was a breach presentation. After birth the thighs remained flexed upon the abdomen and the legs over-extended upon the thighs. There was an ectopia of the abdomen, with considerable protrusion of the viscera, protrusion of the liver, etc.

The brain and spinal cord seemed normal. The head of the radius was displaced on to the front surface of the ulna, and the carpus toward the flexor aspect of the radius and ulna; both hips were displaced upon the dorsum of the ilium, with changes of all the structures entering into the formation of the joint. Head of the femur was irregular in shape. The cartilaginous margin of the acetabulum was absent, although the cotyloid depression seemed exceedingly deep, but not triangular. The ligamentum teres was exceedingly long, and capsular ligament capacious.

Many of the pathological specimens reported, after excisions for old dislocations, demonstrate that the acetabulum ceases to develop, and undergoes atrophic change after the head of the bone has been dislocated. It is easy to conceive of disease attacking one or both hips *in utero*, producing effusion into the joint, with or without destruction of the head; resulting, through reflex spasm of the muscle, in dislocation of the head

of the femur, which is frequently seen in hip-joint disease.

I am inclined to believe, judging from the pathological specimen here presented, and from the case of dislocation at childbirth which I saw, together with pathological specimens reported by Mr. Adams, which I have personally examined in a Pathological Museum in London, that the deformity is more frequently produced by violence of some description, or by pathological changes, the result of inflammation, than from any other cause.

We are all familiar with the "loose joints" in certain individuals who are capable of producing dislocation of almost every joint in the body. I now have a patient who can easily dislocate the right hip and reduce the dislocation, and it gives her no inconvenience.

Given this condition *in utero*, slight causes would suffice to dislocate the head of the bone. If this occurred early in intra-uterine life, the child would probably be born with congenital dislocation and an undeveloped or absent acetabulum.

If the head of a bone has long been dislocated, the surgeon finds, when he performs an excision, that the joint itself is filled with new material. I have observed this in the excision of the shoulder-joint, performed for old dislocation of only six months' standing.

If a dislocation occurs in a rapidly-growing fetus, on account of hereditary causes (a long relaxed ligament), or by violence in childbirth, and the deformity is not discovered until the child begins to walk at the age of fifteen months, it should be expected that the acetabulum would be absent or undeveloped.

To summarize: Congenital dislocation of the hip is produced, I believe, by injury at birth; injury *in utero*, or disease *in utero*; rachitis; hereditary influences, and, in exceptional cases, if such there are, by arrest of development of the acetabulum.

TREATMENT. — The treatment is divided into mechanical and operative. Complete excision of the joint has been performed, and good results reported.

Cutting down and making a new acetabulum in the dorsal of the ilium, and nailing the head of the bone into it, has met with some favor.

These two operations are advisable only in adults or in children over seven or eight years of age.

The operation of Hoffa, of Würzburg, in small children seems to me the most rational one to perform. He makes an incision down on to the head of the bone; scoops out the acetabulum, cutting deeply into the bone, and reduces the head to its normal condition. He claims excellent results from this.

The operation is not performed on children over five years of age, and where it is an impossibility to pull the bone down to the old acetabulum.

Operations of this magnitude are serious, and must be attended with considerable mortality. Still, the results of mechanical treatment in the past have been so discouraging that the surgeon now feels justified in performing any of the operations which promise satisfactory results.

The mechanical treatment of hip-joint disease has always been unsatisfactory, until the case of Dr. Buckingham Brown, of Boston, was reported. This case was perfectly cured, with perfect motion, without shortening. It was treated in bed for two years by extension, and great care in manipulation.

The French have long treated their cases in bed, and have reported very good results. They have also

devised very ingenious appliances for making extension and still allowing their patient motion of the hip-joint. After the patients have been treated for a length of time in bed, they are allowed to exercise in a wheel-chair.

Adams improved upon this method of long confinement in bed, by devising a bed in which extension could properly be applied and the limbs held in the normal position. In this, the patients could be carried into the open air daily. This is simply a form of portable bed.

Sayre and Taylor, in fact nearly all of the American orthopedic surgeons, have treated such cases with the long traction hip-splint: but I must say, judging from my own observations and those of others, that the results of this plan of treatment have been most unsatisfactory. The patient would wear the splint for years, and when removed there would either be a relapse, or one limb would be found to be considerably shorter than its fellow.

I believe that the treatment of congenital dislocation of the hip should be divided into three stages:

- (1) The period in bed.
- (2) The period with the long fixation splint with a lateral-pressure screw. (See Fig. 5.)
- (3) The period with the walking-splint.



FIG. 5.

The patient is never allowed, during this stage of treatment, to step upon the brace, but after a year, or



FIG. 7.

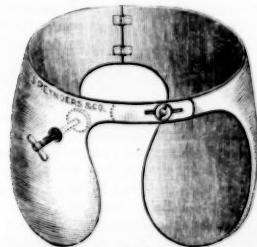


FIG. 6.

The length of the period of bed-treatment should continue until the limb is drawn down to the length of its fellow, if possible. During this treatment by extension, the patient is put into steel breeches (see Fig. 6), which has a lateral-pressure screw fitted to a pad, which makes pressure over the great trochanter: the object being to excite a certain amount of irritation, which will result in the growth of new tissue around the head of the bone.

After the limb has been drawn down to its normal length, which will take usually from two to six months, the patient is put on crutches, with a high shoe and fixation-splint, with lateral pressure, as seen in Figs. 5, 7.

a year and a half, the upper part of the brace is cut off, the high shoe is lowered, and the patient allowed to walk upon the splint.

Small children I treat with the plaster-of-Paris portable bed.

TWO CASES OF RUPTURED UTERUS TREATED EXCEPTANTLY.¹

BY EDWARD REYNOLDS, M.D.

MRS. X., an out-patient of the Boston Lying-in Hospital, had been in labor about eighteen hours when I was called to her on July 24, 1886. The head was extended across the brim, the os was about the size of a dollar, the pains were almost unintermittent, and the uterus was in a state of tonic contraction. The condition had not been considered important, and I was merely sent for on account of lack of progress. I etherized the woman, and introduced the hand to flex the head, but with considerable anxiety, on account of the tonic condition of the uterus. At almost the first touch, before I had made more than a tentative effort, and before I had used as much force as is ordinarily requisite, there was an audible snap, the head receded from my touch, and the cord prolapsed. On passing the fingers through the os, I found that the head and one shoulder had escaped from the uterus into the abdominal cavity through an extensive longitudinal rent in the right lateral wall. The cord was pulsating, and the feet were easily accessible; in the interests of the child, I dilated the os manually, delivered by version, and removed the placenta and membranes manually from the uterine cavity. I then asked Dr. C. M.

¹ Read before the Surgical Section of the Suffolk District Medical Society, December 2, 1891.

Green to see the case with me; in the meantime administering stimulants subcutaneously on account of the severe collapse which almost immediately followed the rupture.

On Dr. Green's arrival, we carefully examined the uterus, and found that the rent extended from the cervico-corporeal junction about half-way to the fundus, but that it had not been prolonged into the cervix during the delivery of the child. There was no hemorrhage of moment; and although the woman was by that time beginning to react from the primary shock, we agreed that her weakness forbade us to think of removing her to a hospital, and that the surroundings, which were those of a filthy tenement house, rendered laparotomy so far inadvisable that it was better to entrust her to the chances of conservative treatment. Within the next few hours she rallied from the shock, and during the next few days underwent a somewhat severe peritonitis, which was treated by opiates. She became progressively more and more weak; and although on the sixth and seventh days after the accident the peritoneal inflammation appeared to be decreasing, she failed, and died, apparently of exhaustion, on the eighth day. There was undoubtedly some septic infection. The child did well. I think now, as we both thought then, that the case was one which under better circumstances should have been treated by laparotomy.

The second case which I have to report is one which I saw in consultation, and which for obvious reasons I am unwilling to substantiate by giving the residence of the patient, or the name of the gentleman with whom I saw it.

The patient was a primipara, and after a somewhat long labor without essential progress, the doctor did a manual dilatation and version, extracting a medium-sized child without especial difficulty. Failing to deliver the placenta by Crédé's method, he passed his hand into the vagina, and was horrified to find that his fingers passed readily through a large rent in the posterior cul-de-sac, and came into contact with the peritoneal surface of the posterior uterine wall.

On arrival, I made a vaginal examination, and assured myself that the posterior vaginal wall had been ruptured across Douglas's fossa at its junction with the cervix, almost from side to side. I recommended no active treatment, other than scrupulous asepsis, which had already been observed during the labor; stimulants to counteract the primary shock, which was not extreme; a liquid, supporting diet; and the free use of small but repeated doses of sulphate of magnesium. I saw the patient several times during her convalescence. She underwent a fairly severe general peritonitis, but was never in a condition which I considered dangerous, and made a prompt recovery. She came to my office about three months later, at my request, for a pelvic examination. She was at that time the picture of health, and complained of no pain or other symptoms. On bimanual examination, I could detect no abnormality of the pelvic organs, other than a readily recognized cicatrix in the posterior cul-de-sac of the vagina.

Though this was properly a case of rupture of the utero-vaginal attachments and not of the uterus, the conditions involved are so closely similar that the distinction seems to be technical rather than essential.

In addition to these two cases I have had the opportunity of seeing two others, both of which recovered without treatment. Of these I will not speak in detail

as I hope that Dr. Green, in whose care they were, will report them himself to-night. My own experience with this accident thus consists of four cases, all treated without laparotomy, of which three recovered, while in the fourth, the only fatal case, circumstances prevented the method of treatment which was really indicated, that is, laparotomy.

I have made no attempt to review the literature of the subject, but before entering upon a general discussion of the question, I wish to quote from the first number of the *New York Journal of Gynecology and Obstetrics*, two very remarkable cases which have a distinct bearing upon the question.

In the course of a discussion upon intra-abdominal hemorrhages in the New York Obstetrical Society, Dr. J. R. Goffe said that "an interesting case had come under his observation last summer, at Randall Island Hospital, in a woman who had been confined four months before, the labor having been a difficult and unsided one. While she was etherized for perineorrhaphy, he carefully examined the pelvic organs, and found that the sound passed directly through the uterus, and could be felt directly beneath the abdominal walls. The uterus was retroverted. Upon dilating the cervix and passing the finger into the uterus, the opening was found to be an extensive rent obliquely across the face of the uterus, reaching from the left horn to the intertus os. There was no history to account for it, but he supposed it must have occurred during labor." This was the second case in which the speaker had found an opening through the uterus. The first occurred in a woman who presented herself at the clinic of the Woman's Hospital, and was seen at the same time by Dr. Cleveland. In that case, they could pass the uterine sound without any force directly through the uterus up to the umbilicus. The opening was not as large as in the one that he had seen the past summer.

When to these cases of my own are added the numerous instances of recovery without operation which I have chanced to see in the course of general reading during the last six years, I can but disagree heartily and entirely with the statement which is so often made, that laparotomy and suture of the rent is indicated in every lacerated wound of the uterus.

I am glad to have an opportunity of speaking upon this subject, because it is one in which I have been led to take an active interest by the experiences to which I have referred, and also because the opinions to which that experience has led me are in considerable contrast to those which we have just heard; and, as I believe that such discussions as this to-night are most profitable if each speaker outlines briefly the views to which his experience has led him, in order to afford an opportunity for the development of both sides of the question, I think it may be permissible for me to occupy a few moments more with a brief statement of the principles by which I should now expect to be guided if any case of this nature should present itself to me.

This accident exposes its victim to three dangers, and to three only; namely, to the exhaustion of primary shock, and to the dangers of hemorrhage and peritonitis.

Primary shock, though rarely fatal, is usually well marked; and is sometimes so severe that it might well be sufficient to cause death in a feeble woman, or in one whose heart was already organically unsound. It

is always an element of importance in estimating the method of treatment which should be employed.

Hemorrhage, though often fatal in untreated cases, must, I think, be much less frequent than has been supposed, at least, in its severer forms. So far as I am aware, its appearance or non-appearance cannot be predicted from the situation or extent of the rent. While there can be no doubt that in the face of persistent progressive hemorrhage, laparotomy and suture of the rent offers the only possible chance of life to the patient, the diagnosis of the presence or absence of hemorrhage is unfortunately by no means easy, and I should certainly agree that in the presence of any question upon this point the patient should be given the benefit of the doubt and subjected to laparotomy. In making this diagnosis our chief reliance, apart from physical examination, must be placed upon the duration of the primary shock. Under the subcutaneous use of stimulants, and the application of artificial heat, the patient ordinarily recovers promptly from shock unaccompanied by hemorrhage. In consideration of the fact that there have probably been but few cases in which laparotomy was performed within an hour after the occurrence of the accident, I should be inclined, in the absence of distinct evidences of hemorrhage, to wait at least an hour after reaction, before assuming its presence.

In many cases, however, it is possible to obtain important information by passing the fingers through the rent, in order to ascertain the presence or absence of considerable clots in the peritoneal cavity; and if this is done with proper gentleness and with due care to minimize the amount of manipulation, I can hardly think that it would add to the shock in degree sufficient to contraindicate the manoeuvre.

In the absence of hemorrhage, the one danger to which the patient is subjected is that of death from peritonitis; and the question in such cases resolves itself into the inquiry, what is the best treatment for peritonitis of either mechanical or septic origin in the presence of a lacerated wound of the uterus? Two elements in the situation must be considered in answering this question; and I think that it is best to consider each separately.

When the circumstances and previous conduct of the case are such that but a small quantity of, presumably aseptic, material can have entered the cavity of the uterus, I can see no advantage in an immediate laparotomy; but should be content with supportive treatment and the administration of Epsom salts, in the manner recommended by Mr. Tait, when the first abdominal tenderness appears; but in the case of a patient who is in good condition and not markedly collapsed, I should be inclined to begin its cautious administration at once, in anticipation of the peritonitis which is almost certain to follow, in some slight degree, at least.

My view of the proper treatment of these cases is founded mainly upon my experience in the treatment of septic peritonitis, in the out-patient clinic of the Boston Lying-in Hospital. Although in that clinic the death-rate from sepsis has of late years been reduced to a scarcely appreciable fraction of one per cent., the conditions under which the work is done have as yet prevented us from wholly excluding the disease in its minor and medium degrees of severity; but, although we are confronted several times each year with septic peritonitis of more or less severe

grade, we have, since the adoption of the open treatment as a routine measure, nearly four years ago, lost but one patient from this cause; and in that one, the onset of the disease was so extremely severe, that within forty-eight hours after the first symptoms she had developed metastatic abscesses, and died of pyæmia on the succeeding day.

In the light of this experience, I cannot believe that the degree of peritonitis which is likely to be caused by the retention within the abdominal cavity of a small amount of aseptic blood, or even of aseptic lochia, is likely to afford a sufficient risk to compensate for the added dangers of laparotomy.

When the circumstances of the case are such that a large quantity of clean foreign material, or an even small quantity of presumably septic fluid, has obtained entrance to the abdominal cavity, I think that the choice of treatment must depend upon the extent and situation of the rent. It seems to me that the only advantage to be gained from laparotomy, so far as the immediate preservation of life is concerned, is gained by the opportunity which it affords for cleansing the peritonitis by the injection of large quantities of warm water; and I contend that when the rent is large and accessible, and so situated as to afford fair drainage, it is better adapted for this purpose than any wound in the abdominal wall can possibly be. I should then in such cases content myself with flushing out the cavity through the wound, taking care to provide an adequate return for the injected fluid; and should resort to the insertion of a drainage-tube or a Miculitz gauze drain, in any case in which this seems to be indicated by the other circumstances of the case. When in the presence of probable septic infection, or of a large amount of foreign material in the peritoneal cavity, the wound is small or in an inaccessible situation, I should unhesitatingly resort to laparotomy, and should then seize the opportunity for the incidental advantage in after life which I believe to be afforded by accurate suture of the uterine wound.

Cases of incomplete closure of the wound, such as those reported by Dr. Goffe, are probably extremely rare, and in such cases, I myself believe that it would be as well for the patient to undergo a subsequent laparotomy for the closure of the rent, rather than to submit to the operation in the presence of shock, and in the face of the other disadvantageous circumstances which usually accompany an accidental rupture of the uterus.

In conclusion, I would then advocate laparotomy in the presence of persistent hemorrhage, and in cases where the rent is small or inaccessible, and the quantity of foreign material introduced into the peritoneal cavity excessive, or of a septic character; if the irritation of the peritoneum has not been excessive, I would content myself by flushing out the abdomen, if possible; I should be satisfied with supportive treatment and the use of saline cathartics in all other cases. The use of these latter remedies I should of course advocate in all cases, whether operated upon or not.

It will be seen that the case which Dr. Haven has reported falls within the class for which I should recommend laparotomy, and I congratulate him heartily upon his wisdom and success in its management.

DR. WILHELM KRAUSE, who has been Extraordinary Professor of Anatomy in the University of Göttingen for thirty years, has resigned his chair.

RUPTURE OF THE UTERUS, WITH THE REPORT OF A CASE.¹

BY GEORGE HAVEN, M.D.

RUPTURE of the uterus, and particularly of the non-pregnant organ; is such a rare and at the same time such a serious accident, that I have deemed the following case sufficiently interesting to present for discussion this evening. I am obliged, in order to give a clear idea of the case, to briefly sketch the history before rupture occurred.

Some time ago I was asked to see Mrs. E., six months pregnant, and eclamptic. The convulsions began at six o'clock, A.M., and continued at intervals of about thirty minutes until eleven o'clock, when she was chloroformed, and the os uteri dilated manually. I saw her at one o'clock, and after a short time delivered her. She was put in a steam bath, given croton oil, etc., and made a perfect recovery. Ten days later, she had a slight hemorrhage, which was followed in five days by a second. Shortly after this I saw her again. She was very much blanched, with a rapid, thready pulse. A small amount of placental tissue, was removed with the curette, in all about a tablespoonful. She was given stimulants and ergot.

Everything went well from this time for a month, when she had a hemorrhage, which in sixteen days was repeated. At this time Monsel's solution was injected. Shortly after this I saw her. Pulse 150, and very weak; lips and finger-nails white. Ether was given, the patient placed in the Sim's position, and the curette introduced, without difficulty after the proper curve had been established. The left uterine wall was explored first, and everything found apparently normal. The curette was then turned to explore the right cornu, when without force and to my dismay, it entered to the handle. The uterus was now examined bimanually, and found small and apparently hard. The patient was placed in bed, brandy given subcutaneously, and arrangements made to bring her to Boston, which was done the following morning. Dr. J. W. Eliot saw the case in consultation. The finger introduced into the uterus felt several grooves, running towards the right cornu; and a sterilized sound introduced into the cavity was clearly felt at the level of the umbilicus. A rupture of the right wall of the uterus was thought to be present, and laparotomy advised. At three o'clock in the afternoon, or twenty-four hours after the rupture was first discovered, with the assistance of Drs. Mumford and Cobb, I opened the abdomen by an incision in the linear alba, two and one-half inches long. The uterus was easily brought into view, and a ragged rent was found extending from the right cornu almost down to the internal os, anterior to the broad ligament. The edges of the rent contained several white centres, which looked like spots of necrosis. A V-shaped piece was excised, leaving a clear wound, in what appeared to be normal uterine tissue. The edges were united by four deep silk sutures, going through the muscular wall, and three superficial ones, drawing as well as possible the peritoneum over the wound. The abdomen was then flushed with boiled water, at about 110° F., for two reasons: first, because of its effect upon the pulse; and, second, to wash out any fragments or clots. The abdominal wound was closed with four silver-wire sutures. The patient was put to bed surrounded with hot bottles; brandy was given subcu-

taneously, as well as by enema. The pulse after the operation was about 160 and weak. An injection of salt solution was thrown into the rectum, but did not remain long enough to be absorbed. After one of the earlier hemorrhages, this was found of great service. The pulse on the third day fell to 125, the temperature never went above 101.2°; and on the twentieth day, the temperature was normal, with a pulse of 100. She remained five weeks at the hospital, then returned to her home. I saw her a few days ago, and found everything in excellent condition. Color has come back to her cheeks; the uterus was firm, small and in good position.

There are two good reasons for resorting to laparotomy in all cases of uterine rupture; namely, the danger of sepsis and the possibility of hemorrhage. The first we may have guarded against, and, to a certain extent, be able to exclude. The latter we can never feel quite sure of when we realize that the uterus is practically an erectile organ; that because it is well contracted at one time is no proof that the contraction will remain; and if it should become relaxed, hemorrhage of great volume can take place, either through the cervix and so externally, or internally, causing a fatal termination.

One other thing is worthy of thought in the case reported; namely, the ragged condition and necrotic appearance of the rent. It was certainly not a wound which would have healed kindly by first intention; an abscess might have formed which at best would have delayed recovery, and been a serious matter for the patient, reduced as she was by hemorrhage; the peritoneal cavity might have been flooded by pus, when the result would probably have been fatal.

I find one case reported in the *British Medical Journal* for October 17, 1891, page 382, where, after puncture, a pint of corrosive solution was injected into the abdominal cavity through the opening in the uterus; the patient dying in the course of three days from sub-limate poisoning. Could this life not have been saved by a laparotomy and proper flushing of the abdominal cavity? Statistics are at best disappointing, so many avenues for error are open.

The title of the paper not limiting me to the simple report of a case, I wish here to incorporate a few tables relating to rupture, etc., in the parturient uterus. First, as regards the frequency of rupture, Dr. Riedinger of Prague reports five cases in 2,005 births; Spiegelberg, one case in 3,000 births; and Leopold, five in 6,100. These tables are of later date than those compiled by Ames in 1881, when he gave 20 ruptures in 99,796 cases or one in 4,990. All these, taken together, give a total of 31 cases of rupture in 110,901 cases, or one rupture in about 3,575. The only cause for error in this calculation is that the English statistics are of a much better showing than the foreign, possibly due to the greater frequency of contracted pelvis among the German population. This great difference will be shown from the fact that at the Royalty Maternity, London, and at Guy's Hospital, there were but 17 cases of rupture in 92,796 cases, or 1 in about 5,500. Winckel gives an interesting table of mortality from tears occurring in different situations:

	Location of Rupture.	Cases.	Recov.	Per cent.
1. Fundus	5	3	=	60
2. Anterior wall	37	17	=	34
3. Posterior wall	8	4	=	50
4. Side	11	3	=	27.3
5. Circular	2	1	=	50
6. Cervix	18	9	=	50

¹ Read before the Surgical Section of the Suffolk District Medical Society, December, 1891.

Bandel states that all tears begin in the lower uterine segment, and extend upward. The greatest number of recoveries, according to this table, have occurred when the tear was situated in the fundus, the next best situation being the posterior wall. Winckel has never known a case to recover where the tear extended into the fornix vaginae. The uteri ruptured, have in almost every instance, been those of multiparae; and in ten cases which I have been able to collect occurring since 1885, I find that but one took place during the first pregnancy; three in the second, four in the fourth, one in the sixth and one in the seventh.

There are those who still strongly advocate an expectant method of treatment, namely, drainage, tight abdominal bandage, and in some cases massage; and on the other side, there are those who believe that the abdomen should be opened in every case. We must not forget that there are complications which may make either method a failure; as, for example, first, the escape of a macerated fetus through the tear. In eight cases of this kind, three only recovered. Second, where the fetus has partly escaped, and an attempt is made to remove it through the natural channel, the tear is often enlarged, and the prognosis consequently more unfavorable. The third complication is where the gut prolapses through the tear into the vagina. In many cases which have come to operation, hours have elapsed since the rupture occurred, the patient has lost much blood, and is suffering from profound shock. Given a case where the tear is discovered almost as soon as it occurs, and I think there is very little doubt that laparotomy is indicated, especially since the improved Cesarian section has taught us how to suture the uterus. The nature and seat of the tear will have to be considered. Haemorrhage is first controlled by the ligature, or forceps. If the tear is low down in Douglas's fossa, and of not very large extent, drainage into the vagina may be employed. If, on the other hand, the tear is fairly clean and occurs either on the fundus or upon the anterior or posterior wall, the edges may be trimmed and united with deep and superficial sutures. If ragged and large in extent, especially if extending from the fundus well down to the cervix or into it, the uterus had better be removed, by amputation, if enough of the cervix remains to form an extra-peritoneal stump; the mortality being great where the stump is dropped back into the abdominal cavity. If this is not the case, the whole organ had best be removed. Coe thinks that in cases where the tear is incomplete, and where hemorrhage has taken place in the broad ligament, there is still some doubt regarding the treatment. These are cases which I think can safely be left to nature, and the less we meddle with them the better. I have found notes of ten cases which, so far as I know, have never been tabulated. Eight were treated by laparotomy. Of these, four recovered and four died. One of these cases, however, was complicated by the escape of a macerated fetus into the abdominal cavity, so that I think it is only fair to exclude this one from the number. If this is done, we have four recoveries and three deaths. Two were treated by drainage. One lived and one died. The uteri in the cases operated upon were all treated with the Seenger stitch, silk being used for ligature; and in this connection, it seems only fair to include Winckel's cases, where ten out of fourteen recovered, all treated by laparotomy.

In conclusion, it appears to me that in cases of

rupture of the uterus, both in the pregnant and non-pregnant variety, our best course is to open the abdomen, wash out the abdominal cavity and unite the tear by deep and subserous stitches, in all cases where it does not involve too much uterine tissue, or where the edges are not too much bruised and torn. Punctured wounds, as those made by the sound, for instance, can very properly be left to nature. The autopsy table has shown many uteri bearing scars from punctured wounds which occurred during life and gave no trouble.

In considering this subject, we must not forget the great advance which has been made since Seenger's first article on the improved Cesarian stitch. That we can open the parturient uterus, remove the fetus and sew it up again without to any great extent endangering the patient's life, is, I think, a pretty generally accepted belief.

As regards the material best suited for ligatures in this operation, I think that silk takes the first rank.

There are in the October number of the *American Journal of Obstetrics*, several cases of Cesarian section reported, where the operation had been performed from two to three times upon the same individual, in some of the earlier operations, silver-wire having been used to bring the uterine surfaces together. It was found in position and in perfectly good condition; but the scar was not so firm as that found in cases where the silk had been used. The same may be said of catgut.

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THE FROG AND THE PHYSIOLOGIST. — In his Christmas lectures at the Royal Institution in London, Professor McKendrick spoke of the services which frogs have rendered to the cause of physiology, and suggested that a statue of a frog be erected as an acknowledgment of the many benefits which the race of frogs have indirectly conferred upon the human race.

**REMOVAL OF A CANCEROUS UTERUS BY
VAGINAL AND ABDOMINAL HYSTEREC-
TOMY.¹**

BY ERNEST W. CUSHING, M.D., OF BOSTON.

The operation of vaginal hysterectomy for cancer is now so well established as a comparatively safe and thoroughly useful operation, and the technique is so well understood, that descriptions of simple cases are no longer of particular interest. Various complications may arise, however, such as impaction of the vagina or broad ligaments in the disease, inflammatory adhesions of the uterus or appendages, or disproportion of the size of the body of the uterus to the capacity of the vagina, which may either contraindicate the operation or make it so difficult and hazardous that it is not easy to decide whether it should be performed or not.

The case which I have to report to-night belonged to the latter category, and presented several features which make it worth reporting, and render it valuable as a means of establishing certain conclusions, and in aiding the formation of a decision as to what course is to be adopted in similar cases.

The history is as follows: The patient is thirty-seven years of age, married. She was brought to the Charity Club Hospital by Dr. Blazo, of Rochester, N. H. She had always enjoyed good health until nine months before entering the hospital, when she began to suffer from a sharp pain in the side, and had an acrid and watery vaginal discharge, which has lately increased. There is pain in the back, left side and leg, so that she cannot sleep. She is very nervous and has had to take morphine on account of the pain. The discharge is now bloody and offensive. Five months ago an operation was performed for removal of a cancer from the cervix uteri. This operation only gave temporary relief to the symptoms. The fundus uteri has enlarged considerably during the last few months. Owing to repeated hemorrhages which have occurred lately, the patient is quite weak, though able to be about her room part of each day.

On examination it was found that the cervix, or what remained of the vaginal portion, was cancerous, the disease extending to the posterior fornix of the vagina at one point, elsewhere seeming to be limited strictly to the uterus. The broad ligaments were not implicated. The uterus was freely movable but the body was enlarged to the size of a fist, so that it was very doubtful whether it could be delivered through the vaginal opening.

All things considered it was determined to remove the cancerous cervix at any rate, and to extirpate the whole organ if the conditions found on operation and the strength of the patient should permit.

The cancerous tissue was first scraped away with the spoon-saw, the bleeding checked by packing the cavity of the cervix, and the field of operation thoroughly cleansed. The cervix was drawn down by threads passed through it and by forceps, and the customary incision carried round it. This was a matter of great delicacy posteriorly, as it was necessary to carry the incision below the limit of the disease in the posterior fornix, and to dissect carefully in order to avoid the rectum. This took some time as the parts were vascular and it was necessary to control all

hemorrhage with stitches and ligatures, since the patient was in no condition to lose much blood. The broad ligaments were secured with ligatures in order to have as much room as possible for extraction of the fundus. This took so much time, however, that I finally put a clamp on each side, thus securing all except the upper portion of each broad ligament.

It now became evident that the uterus was so long that these portions could not be reached without retroverting the uterus, which was impossible on account of its size. It could not be drawn down sufficiently to split it in halves, as the peritoneal insertion was very high up, both over the bladder and posteriorly.

The patient's condition was excellent, and the quickest and safest thing to do seemed to be to open the abdomen to remove the rest of the uterus. This was done at once, the diseased portion of the uterus having first been amputated and the vagina well cleansed as well as the hands of the operator; fresh instruments and sponges were employed, such as would be used in any abdominal section.

The patient lay, however, in the lithotomy position. The abdomen being opened the fundus was drawn up easily with bullet forceps. A clamp passed into the vagina was made to grasp the remaining portion of the left broad ligament, which was then severed. A chain stitch of catgut was then made to include the tissue between the anterior surface of the uterus and the bladder, as well as the remaining portion of the right broad ligament. The fundus was removed, the pelvis well irrigated with hot Hygeia distilled water, and a twist of iodoform gauze, as large as the wrist, was drawn from above down through the vagina. The abdomen was then closed, not having been open over ten minutes.

The patient was put in bed in good condition; the gauze drain carried away all the irrigation fluid. There was no hemorrhage and the patient rallied well. The day after the operation all seemed favorable except that the pulse was rather rapid and intermittent. The second night, however, symptoms of heart-clot supervened. Precordial pain, anxiety, rapid intermittent pulse, rapid breathing, and towards morning vomiting of gastric fluid.

The second morning the clamps and gauze were removed. The abdomen seemed to be quite in order, no pain nor distension. Temperature 102°. The pulse however, was rapid and feeble, and could not be felt after nine o'clock. Some vomiting still; cardiac distress; pulse in carotids, 180. Death at noon, forty-seven hours after completion of operation.

Autopsy.—No signs whatever of sepsis or peritonitis; no fluid nor lymph in peritoneal cavity. Intestines had adhered together sufficiently to roof over the site of the pelvic operation. Kidneys normal. In the heart, beginning at the tricuspid valve, there was a firm clot, interlacing with the muscles and tendons of the valve. This clot extended through the opening of the pulmonary artery, and followed the bifurcations of this vessel, as is seen in the specimen here presented, to the fourth or fifth bifurcation, so that it ends in long fine tufts, forming a complete cast of the lumen of the pulmonary artery.

The uterus herewith presented shows very distinctly the cancerous disease of the cervix and the impaction of the posterior fornix. The enlargement of the corpus was due to a nodule in the anterior wall, about one inch in diameter. What this was, of course, could not

¹ Read before the Surgical Section of the Suffolk District Medical Society, December 2, 1891.

be determined during the operation, and was not sufficiently clear even on incision of the specimen. Under the microscope it appears to be a sarcomatous nodule, and such is the opinion of Dr. Whitney, who has kindly examined it. I have here very fine microscopic slides, prepared by Dr. S. P. Cottrell, showing the nature of the disease of the cervix and of the nodule in the fundus. The one under the microscope is for the examination of members of the Society.

Of course, the fatal termination of this case leads to a consideration of the causes of this result, and of any means which could have been used to prevent it.

Heart-clot or thrombosis of the pulmonary artery is not a very rare complication of operations when the blood of the patient has been impoverished by long suppuration or by continued hemorrhages. It is thus peculiarly liable to follow hysterectomy for grave cases of cancer, or for myoma, when this has led to much hemorrhage.

The obvious conclusion is that the operation should be performed early, before the system is exhausted and the blood is impoverished. It is a very unfortunate and unpleasant position for the surgeon to have to choose between refusing his aid to a patient, who without it is doomed to certain and painful death, or, on the other hand, operating when he plainly sees that the chances are unfavorable, owing to delay. The consensus of operating gynecologists is strongly in favor of early operations in all cases which will have to be operated on eventually, and in this respect there is little doubt that the profession and the public will gradually be educated into the same position in regard to pelvic inflammations and myomata of the uterus, which they are now holding in regard to ovarian tumors. In regard to carcinoma uteri, however, the case is much stronger, every day of delay increases the risk of relapse, and may increase the difficulty and risk of operation. There is practically no danger in vaginal hysterectomy if done early and while the patient is in good condition, provided the operation is done properly and the subsequent treatment is judicious.

When in Berlin, in 1885, I heard Martin declare that in his opinion the proper treatment for all cases of cancer of the uterus in the early stages, was vaginal total extirpation of the uterus. I was astonished, but time has shown that his position is the right one, and I think it will now be endorsed by those modern operators who have studied the question thoroughly and are free from preconceived opinions on the subject.

In cases, however, like the one here presented, where the patient is weakened from hemorrhage and discharge, it is sometimes well to do a preliminary operation for removal by the spoon-saw and cautery, of as much of the diseased tissue as possible, and this I have done in several instances with the happiest results. The absorption of septic matter is thus stopped, hemorrhage ceases, opportunity is given for systematic nutrition, and after two weeks the major operation can be performed with better prospect of success. The disadvantages of this course, however, are the increased danger of relapse, owing to longer presence of the disease, and also the disqualification of the patients to undergo two operations when one might answer. In hospitals, also, where surgical work is done which must be clean and aseptic, it is not safe or right to other patients to have among them a case

where the uterus is cleaning up after curetting and cautery. Of course, this objection is of less force where proper isolation of such unclean cases can be had.

In the case reported I judged it wiser not to delay as the disease had reached the extreme limit where extirpation was possible, and as I feared further spread of the disease both in vagina and fundus, while during the operation no signs of shock were noticeable. In regard to the removal of the cancerous uterus by means of an abdominal incision, it is well known that Freud's operation was so fatal as to be abandoned, but the cause of the mortality is easily found in the fact that all the steps of the operation were done from above, and then the anterior and posterior edges of the wound were united, making a long, difficult, tedious operation, without systematic drainage, and where the circumstances of the case were such that the peritoneal cavity was pretty sure to be infected. It is far easier and quicker, however, to remove the fundus only from above, after all the lower parts of the broad ligament had been severed from below, and the separation of the uterus from the bladder has likewise been largely entirely accomplished from the vagina. This method is applicable to cases of hysterectomy for myoma as well as for cancer; the compression of the broad ligaments by a clamp introduced from the vagina, as described above, was first performed by a surgeon of Brooklyn, N. Y., and is a rapid means of enabling the uterus to be brought up. In cases of hysterectomy for myoma or more particularly for sarcoma of the body of the uterus, where it is thought desirable to remove the whole of the cervix, the operation may be commenced and finished from above, or when the upper part of the broad ligaments has been tied off, the cervix may be encircled with a rubber constrictor and divided above the latter, when the stump can be surrounded with iodoform gauze and replaced at the bottom of the pelvis, the rest of the operation being finished from below.

The question of the best method of removal of the whole of the uterus, where it cannot be done by vaginal hysterectomy, is a very important one, and one which is under active consideration and discussion at the present time, but it cannot be adequately treated within the limits of this paper, which has been written merely to record one case, as it is only by the consideration and comparison of a large number of such operations that we can decide as to the best manner of treating such difficult and dangerous conditions.

Clinical Department.

CYST OF THE PANCREAS, TREATED BY LAPAROTOMY; DRAINAGE; RECOVERY.¹

BY M. H. RICHARDSON, M.D., AND J. G. MUMFORD, M.D.

THIS case is interesting as showing an unusual condition coincident, but not associated with already existing disease.

The patient, Mrs. B., referred to Dr. Richardson by Dr. Cox, of Holyoke, was a robust woman of thirty-eight, with an excellent previous and family history. She was married at the age of nineteen, but

¹ Read before the Surgical Section of the Suffolk District Medical Society, December 2, 1891.

never became pregnant. Up to the age of thirty-four her catamenia were painless and regular, every twenty-eight days.

Four years ago menorrhagia became noticeable, and increased in frequency for a year, when she sought medical advice. Two years ago she thought herself well, after the prolonged use of galvanism. A few months later, however, flowing returned, this time accompanied by the familiar train of symptoms which had not previously been prominent,—backache, headache, “bearing down” and frequent micturition.

By physical examination the uterus was found in the first degree of retroversion, enlarged symmetrically, about the size of a large orange, four and one-half inches in depth, the endometrium friable and bleeding easily. The patient's general condition was good; for the menorrhagia, though of ten days' duration each month, was inconsiderable in amount. Rest in bed, two thorough curettings and tonic doses of ergot and bromide of potash enabled the patient to consider herself well and to go about her household work after three months. This was January, 1891. Mrs. B. thinks that until about the 1st of May she had no further pelvic disturbance.

About the 10th of February, however, she had an attack of vomiting with pain in the epigastrium and for a month eating was followed by nausea. About the 1st of March she noticed a slight swelling in the region of the stomach, rather to the left of the median line. The swelling increased to the size of a small coconut. The pain seems to have been not excessive, though the patient appears to have taken much morphine. There was constant *malaise*, loss of appetite, dimness of vision, and morning headache with some constipation.

About the 1st of May the tumor entirely disappeared. The relief was temporary. The swelling returned slowly, and on the 1st of July, appeared to be two to three times the size of a child's head.

During these last three months, also, the uterine disturbances returned, and when admitted to St. Margaret's Home, the patient was suffering from a profuse hemorrhage. Small doses of ergot and iron controlled the flowing after a few days, and the pelvic disorders were, for the time being, disregarded, an examination of the uterus and annexa showing no material change from the conditions existing nearly a year previously, except that the uterus itself had become much diminished in size.

The woman's general appearance was at no time bad, and there seemed to have been no great loss of flesh. Restlessness, lack of appetite and constipation besides genuine acute epigastric distress, were alone the noticeable symptoms.

In the upper part of the abdomen was a tumor centered about three inches to the right of and above the umbilicus, egg-shaped, eight and one-half inches long by five inches at greatest appreciable breadth, smooth, movable, tense, not adherent to the skin, fluctuant, not tender or painful on moderate pressure. The patient had at no time been jaundiced, the stools had been normal in appearance, the urine was not in any way abnormal. The liver was apparently crowded slightly upwards, but not enlarged. There was no increase in the area of stomachic tympany, nor had the symptoms for several months pointed to a gastric disturbance. The question of exact diagnosis could not be settled by any evidence so far obtained. Cer-

tainly the patient was suffering great pain and discomfort from a cystic tumor of large size in the right hypochondrium and epigastrum.

An exploratory abdominal section was decided upon, and performed by Dr. Richardson, assisted by Dr. Mumford, July 28, 1891. The incision was made as if for cholecystotomy. The cyst, thin-walled, non-adherent, and but slightly vascular, was reached and tapped. One and one-half gallons of fluid, as described in Dr. Whitney's report, were drawn off. When this was withdrawn there remained a deposit of grayish-looking, greasy material, not unlike cheesy tubercular glands in appearance, lining the cyst wall.

The depths of the cyst were explored with the finger, which followed easily down behind the stomach, towards the left, to the middle of the pancreas, its broad pedicle being intimately associated with that organ. The operation was carried no further. Considering the feeble condition of the patient and the extensive attachment to so vital an organ, it would have been highly injudicious to have attempted enucleation of the cyst. Its walls were therefore stitched to the abdominal parieties, the cut in the cyst left open, and syphon drainage established.

The subsequent history of the case was uneventful. As in all similar conditions, the closing-in of the cyst cavity by granulation and adhesion was slow, but at the end of six weeks the patient went home well, except for a sinus which discharged daily about half a teacupful of clear fluid.

The long confinement in bed, together, perhaps, with tonic doses of ergot and iron, vastly improved the pelvic conditions. Two catamenial periods had been normal and painless, and the size of the uterus had sensibly decreased. Three months after the operation the wound had nearly healed, a slight sinus still persisting, and there was no return of symptoms.

Dr. Whitney's report was as follows:

“July 28, 1891. Fluid from the case of Mrs. B. There was said to have been withdrawn eight pints, by abdominal section.

“Thin, slightly opaque fluid with considerable pinkish sediment. Specific gravity, 1007; reaction alkaline; albumen one-fourth per cent.

“Microscopic examination showed normal red corpuscles; numerous leucocytes of varying shapes; a few larger cells with a distinct nucleus, nucleolus, and a clear protoplasm containing occasional oil drops. Small collections of oil drops (granular corpuscles) and numerous masses of thread-like filaments which did not stain with methyl blue on cover-glass preparations. These were determined by Drs. Fitz and Harrington to be crystals of stearine.

“The fluid emulsified fat, and changed cane sugar to grape sugar.”

There is no question but that the safest method of treating cysts of this kind is by drainage, without making any attempt at enucleation. It is obviously very difficult to dissect out a cyst which is in most if not in all cases caused by a dilatation of the canal of Wirsung or some of its branches. In the case of cyst of the pancreas, previously reported by Dr. Richardson,² the sinus became completely closed at the end of about ten months. The immediate effect of the secretion upon the skin is an irritating one, but by care this may easily be avoided. The discomfort of a persistent sinus is therefore not great. Bearing in mind

² See Boston Medical and Surgical Journal, Vol. xxiv, No. 5, p. 111.

the dangers which would attend the rupture into the epigastrium of a tense cyst of whatever origin, it is quite imperative that such collections should be investigated by early exploration, and treated in accordance with existing conditions.

NOTE.—January 23, 1892. Examination of Mrs. B. to-day, at her home in Holyoke, shows a vast improvement in her general condition. There still remains a sinus in the centre of the epigastric wound, kept open by a small piece of iodoform gauze, which discharges about half a teaspoonful a day. The fluid is perfectly clear. The skin is in good condition, having been protected by the use of oxide of zinc. The director goes in about two inches and a half. The abdomen is soft everywhere, and no tumor or swelling can be detected by physical examination. There seems to have been a diminution in the amount of discharge since the last report, three months ago. I advised removing the cotton in order to allow the sinus to heal, if possible. — M. H. R.

Medical Progress.

RECENT PROGRESS IN THE PATHOLOGY OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

MUSCULAR DYSTROPHY.

To the opening numbers of the new *Deutsche Zeitschrift für Nervenheilkunde*, Erb¹ contributes the most exhaustive monograph that has yet appeared upon this subject. The clinical types of dystrophies generally recognized are the "juvenile" form of Erb, beginning in youth, occurring in families, affecting primarily the muscles of the shoulder and upper arm, and often associated with true or false hypertrophy; second, the ordinary pseudo-hypertrophy; third, the "infantile" facio-scapulo-humeral type of Duchenne, recently described by Landouzy and Dejerine, and discussed in these columns;² and, lastly, the "hereditary" form of Leyden, beginning usually in the legs. Erb has collected nearly ninety cases, and a number of autopsies and reports of examination of excised muscles. He maintains the essential unity of these four forms. In the juvenile and infantile forms there is often pseudo-hypertrophy; in pseudo-hypertrophy there is often atrophy of the shoulder muscles: in both forms the face may be subsequently involved, all forms may be hereditary, and in the hereditary form the shoulder muscles may be involved. All forms agree in the characteristic attitude of the patient, the affection of certain muscles, the occurrence of hypertrophy and pseudo-hypertrophy, the absence of fibrillary twitches, and the simple quantitative diminution of electrical irritability. One or two cases are reported in which there was reaction of degeneration, but Erb himself has never seen it. Furthermore, transition forms are not uncommon: in the juvenile form the face may be subsequently involved, as it may in pseudo-hypertrophy; the infantile form may show "juvenile" localization or pseudo-hypertrophy; pseudo-hypertrophy may have later a juvenile localization, and all may be hereditary. Finally, forms may occur which cannot easily be assigned to any one of these four types. Another argument in favor of unity is that in one and the same family several of these types may be found. From the harmony in all the essential clinical features, from the occurrence of transition forms, and from the occurrence of several forms in the

same family, Erb therefore concludes that clinically these four forms are essentially one.

On the pathological side, Erb³ has collected the records of eighteen autopsies, and twenty-three examinations of excised muscles. He finds the characteristic changes to be hypertrophy of the muscular fibre, present in post-mortem examinations as well as in excised portions, and therefore not due, as Oppenheim and Siemerling have claimed, to the results of excision; atrophy of fibres; a change in the shape of the fibre, which loses its angles and becomes rounded; an increase of nuclei, with the presence of nuclei in the centre of fibres; fissuring and division of the fibres; and the formation of vacuoles. These changes occur in various combinations, but it is impossible to make any anatomical distinction between the four forms. In all, for instance, hypertrophy and fissuring may be rare or frequent, and the fibres may be equal or may vary greatly in size. The interstitial tissue is usually increased in amount, and a deposit of fat is common in it. In general this proliferation of connective tissue and fatty infiltration is pronounced in pseudo-hypertrophy, but it is also observed in the other forms, and some of the muscles in pseudo-hypertrophy show it only in a slight degree. The complete autopsies show, as a rule, that the nervous system is intact. The muscular changes are the same in these cases as are found in the excised muscles. Erb concludes, therefore, that we do not find in the different forms of muscular dystrophy any essential and comprehensive distinction in the histological changes in the muscles, and that these types form one morbid entity, dystrophia muscularis progressiva.

In discussing the pathology he considers that the changes in the muscular fibre are primary and essential, and that the connective tissue changes are secondary, for changes in the muscle are often found alone, but changes confined to the connective tissue are never seen. The muscular changes are hypertrophy, atrophy, increase of nuclei, vacuole and fissure-formation. Hypertrophy is regarded as a distinct pathological lesion, not due to preparation for the microscope or to increased activity, and is probably the initial process, followed by atrophy; just as we find weakness the first symptom, followed by atrophy. The changes in the connective tissue, increase of nuclei and slight hyperplasia, followed as the muscular fibres atrophy, by marked hyperplasia and lipomatosis, are secondary. The whole process cannot well be regarded as inflammatory. In spite of the absence of discoverable changes in the nervous system, and the present belief that the trouble is a primary myopathy, Erb is inclined to believe that the muscular changes are due to dynamic, as yet undiscoverable changes in the nerve centres; this opinion is based upon the heredity, the localization of the morbid process in definite muscles and nerve territories, and the coexistence of other nervous troubles, such as epilepsy and idiocy, and the occurrence of similar muscular changes in undoubtedly spinal disease.

THE PATHOLOGY OF FACIAL PARALYSIS.

Minkowski⁴ has had an opportunity to make an autopsy on a patient who was recovering from typical "rheumatic" facial paralysis due to cold, and this autopsy contradicts the current belief that the paralysis is due to an inflammatory swelling of the connective tissue compressing the nerve in the Fallopian canal.

¹ Deutsche Zeitschr. f. Nervenheilk., I., 13, 173, 1891.

² See this Journal, September 16, 1886.

³ Berliner klin. Wochenschr., July 6, 1891.

No changes were found traceable to inflammatory processes in the neurilemma, the nerve was not adherent to the canal, there was no increase of the connective tissue or alteration in the vessels, and the perineurium was normal. From the geniculate ganglion outwards to the periphery the nerve fibres were found in a highly advanced state of degeneration, the degeneration being most marked toward the peripheral extremity of the nerve.

MULTIPLE NEURITIS.

Pal⁴ has recently published a valuable monograph on this subject, giving a review of our knowledge, based on a very extensive bibliography, and a report of eight cases, four of which came to autopsy. In the enumeration of symptoms he notes that the knee-jerks are in rare cases exaggerated, that degenerative reaction may be found in nerves still performing their normal functions, that all forms of sensory disturbance including delayed conduction and double sensations, may be observed, that disturbances of the bladder and rectum and laryngeal and visceral crises may occur, and that the cranial nerves may be involved. His first case presented the picture of a rapidly developing paralysis, involving the ocular muscles, and attended with pain and nerve tenderness. The autopsy, beside peripheral neuritis, showed intense hyperemia of the gray matter of the cord. The second case was of a subacute recurrent type, with paralysis, atrophy, pain on movements, edema, and hyperesthesia. The patient was tubercular and alcoholic. The autopsy showed pulmonary and intestinal tuberculosis, neuritis, and degeneration in Lissauer's tract in the lumbar cord, and in Goll's column in the cervical cord. The third case was also tubercular and alcoholic, with pain, weakness, edema, diminished sensibility, normal electrical reactions, nerve tenderness and loss of reflexes. The autopsy showed neuritis and degeneration of Goll's columns and of the anterior peripheral portion of the anterior columns in the cervical cord. The fourth case was one of chronic lead-poisoning with optic neuritis, eclampsia, colic, paralysis of cranial nerves, ataxia, paresis, loss of knee-jerk and bed-sores. The autopsy showed neuritis, degeneration of the posterior roots and of Burdach's columns, and disseminated degenerations in the lateral and Goll's columns and the cerebellar tract. Pal disbelieves in Erb's hypothesis that neuritis is due to dynamic changes in the ganglion cells, for in his cases, with profound disturbances in the cord, the ganglion cells were intact. Individual portions of almost all the tracts of white matter in the cord were found affected, which renders it probable that the affection involves not only systems of fibres, but may be disseminated, and that the fibres of the conducting tract in the cord may be diseased in the same way as the fibres of the peripheral nerves. In tuberculosis we may find a latent neuritic characterized only by edema and diminution of faradic-cutaneous sensibility.

LANDRY'S PARALYSIS.

The pathology of this affection has recently been much discussed, and much doubt has been expressed as to whether it should be regarded as an independent affection. Ross⁵ collected ninety-three cases, and although he admitted that in some cases no lesion could

be found, he decided that Landry's paralysis was merely an acute form of multiple neuritis. Centanni⁶ found acute interstitial neuritis in a case of Landry's paralysis due, as he thought, to a peculiar bacillus found in the endo-neural lymph spaces of the peripheral nerves. Nauwerck and Barth⁷ report a case where the nerves of the canda equina showed interstitial neuritis to a marked degree, with pronounced disappearance of the nerve fibres. The sciatic nerves and the nerve roots of the cord, especially in the lumbar region, were also involved. They conclude that a typical acute ascending paralysis, with slight sensory symptoms, without implication of the sphincters, and without electrical changes, may prove fatal, and no changes in the central or peripheral nervous system can be discovered. No sure proof has been offered that a typical clinical picture of acute ascending paralysis can be caused by any lesion of the central nervous system; but, if we include in the symptoms severe sensory symptoms, afflictions of the sphincters and electrical changes, such a condition may be caused by disease of the peripheral nerves. Hun⁸ has recently reported a case which seems conclusive. A man of forty-five, gradually began to have stiffness of the legs, and heaviness of the feet. The muscular power and the knee-jerks were diminished. This weakness increased until the legs were wholly paralyzed and the arms began to be affected. Phonation and deglutition were also affected. Examination showed marked disturbance of speech and deglutition, left facial paralysis, great weakness of the arms and absolute paralysis of the legs, loss of reflexes, no muscular tenderness or atrophy, normal sensibility to pain, touch and temperature, normal electrical sensibility. Death followed in a few days from failure of respiration. The brain and cord were normal, few of the larger and smaller veins in the spinal pia mater had their walls infiltrated with round cells, and in some instances the walls were thickened. No hyaline thrombosis, which Kiebs⁹ has regarded as a cause of the disease, was found in the spinal vessels. The anterior roots of the canda equina showed degeneration in about one-tenth of the fibres. The other roots and the peripheral nerves were normal. No bacilli of any sort could be found. There was also a slight meningitis.

MORVAN'S DISEASE.

Charcot¹⁰ has recently called attention to a rare affection first described by Morvan, a Breton physician, in 1883, and called by him, analgesic paresis with panaritium. The characteristic features of the disease are severe pains at the onset; paresis with analgesia, first on one side and then on the other, and panaritium. The paresis is associated with more or less atrophy of the hand and forearm, and analgesia develops later. There is also anesthesia to touch and temperature, and Morvan claimed that the dissociation of sensibility seen in syringo-myelia — anesthesia to pain and temperature and normal sensibility to touch — did not occur in this affection. Morvan¹¹ himself has since studied this point more carefully, finding tactile anesthesia in every case. The affection is not uncommon in Brittany, Morvan having seen twenty cases in a population of 50,000, and it is commoner in

⁴ Centralblatt f. klin. Med., November 13, 1889.

⁵ Beiträge z. path. Anat. und z. allg. Pathologie, v. 3.

⁶ New York Medical Journal, May 20, 1891.

⁷ Deutsche med. Wochenschr., January 15, 1891.

⁸ Progrès médical, 15, March 22, 1890.

⁹ Gazette hebdom. de med. et de chir., Nos. 25, 26, 1890.

⁴ J. Pal: Ueber multiple Neuritis, Vienna, 1891.

⁵ Medical Chronicle, November, 1889.

men than in women. The panaritium is severe, leading to necrosis and incurable deformities of the hands. Morvan thinks there may be neuritis, but that that is subordinate to some disturbance in the spinal gray matter, and that there is never any cavity formation in the cord. Déjerine¹² shows that there may be pronounced neuritis in syringo-myelia, giving rise to tactile anesthesia, and that syringo-myelia may rarely present a symptom complex identical with that of Morvan's disease, but as Morvan has seen so many cases in a small district, while syringo-myelia is rare, he inclines to the belief that Morvan's disease is associated with some infectious cause, and is, perhaps, to be classed with the infectious or toxic neuritides. The question of the identity of the two afflictions, Morvan's disease and syringo-myelia, has been much discussed, and an autopsy by Joffroy and Achard¹³ seems to throw some light on the subject, confirming Déjerine's position. A man of thirty had panaritium in both hands, with severe pains at first. Sensibility to touch, pain and temperature were diminished. Motion was impaired, but there was no atrophy. Kyphosis existed. The autopsy showed sclerosis of the posterior columns and a marked syringo-myelia, some muscular atrophy, and degenerative neuritis. The authors do not regard the dissociation of sensory disturbances as necessary symptoms of syringo-myelia, nor do they claim that syringo-myelia exists in every case of Morvan's disease; but it seems fair to assume that there is some lesion, not necessarily a cavity, in the same region of the cord in Morvan's disease as there is in syringo-myelia.

CAISSON DISEASE.

Van Rensselaer,¹⁴ in the Merritt H. Cash prize essay, has written a careful monograph on this subject, based on two cases, one with autopsy, and the recorded autopsies. He finds that the macroscopic lesions consist in congestion or softening of the cord, congestion of the brain, and congestion of the internal organs. Microscopic investigation shows that caisson disease is probably due to a lesion of the cord which attains its greatest intensity in the lower dorsal region, which attacks the white matter rather than the gray, and which is of a degenerative nature, or due to a diffuse parenchymatous myelitis. This degeneration is seen chiefly in the posterior and lateral columns, and the gray matter is usually unaffected; ascending and descending degenerations follow. Caisson disease he regards as due to congestion and malnutrition of the internal organs, especially the cord, and this congestion is due to paralysis of the vessel-walls from previous over-distension, and to a lack of *vis a tergo* of the blood-current, because the blood finds easier passage through the peripheral vessels, which had been partly emptied by the previous pressure. The exciting causes are long-continued pressure, great pressure, rapid removal of pressure, exhaustion and cold during removal of pressure, and possibly evolution of gas if the pressure be very suddenly removed, although he thinks the gaseous theory inadequate to explain the whole condition. The predisposing causes are obesity, old age, heart and kidney diseases, and lowered vitality.

(To be continued.)

A JOURNAL of pathology is about to be published at London, under the charge of Dr. Sims Woodhead.

¹² Médecine mod., July 10, 1890.

¹³ Arch. de med. expér. et d'anatomie pathol., No. 4, 1890.

¹⁴ Transactions New York State Medical Society, February, 1891.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDEER, M.D., SECRETARY.

REGULAR meeting, Wednesday evening, December 2, 1891, DR. A. T. CABOT in the chair.

DR. GEORGE HAVEN read a paper on

RUPTURE OF THE UTERUS.¹

DR. EDWARD REYNOLDS reported

TWO CASES OF RUPTURED UTERUS TREATED EXPECTANTLY.²

DISCUSSION.

DR. C. M. GREEN reported two cases of ruptured uterus treated without operation — both of which recovered. He said:

The first case was in 1886, in a non-pregnant uterus. The woman had had multiple fibroids of the uterus, the symptoms not being of sufficient gravity to warrant hysterectomy. At that time I do not think much was said about the electrical treatment; at any rate, it was not thought of at the time, and the plan was to dilate the uterus in the hope of finding and removing some simple intra-aural or sub-mucous growth, or to curette, in the hope of limiting the hemorrhage. The patient was taken to a private hospital, and an attempt made to dilate the cervix in order to explore the interior with the finger. The steel dilator was used. During the dilatation I became rather tired and the dilator was temporarily taken in hand by another gentleman, who probably used more force than ought to have been used. At any rate, after beginning to explore the uterus the curette, which I introduced, practically disappeared. Then I took a long sponge holder and seized that with long dressing forceps, and that disappeared, so that there was no question about the fact of ruptured uterus. All further attempts at exploring or curetting were given up. I expected the patient would die then and there. There was a good deal of shock. A light tampon was put in the vagina, she was put to bed, and stimulants were used. She rallied after a time, and the next morning her temperature was a little over a hundred, but fell below a hundred that night, and the morning of the third day it was natural. There was no hemorrhage at the time externally. She went on with normal temperature, but on the fourth and fifth days it was a little subnormal, on the evening of the fifth a little above a hundred, and the next morning normal. On the night of the seventh it was 102.5°, and from that point it gradually fell to normal. She made an entire recovery so far as the rupture went. The treatment was expectant. A report of the case may be found in Vol. XIII of the Transactions of the American Gynecological Society.

The other case was a puerperal rupture in 1888. The woman had a deformed pelvis, probably a small flat pelvis. She had been delivered once already by myself, with high forceps, the head having been engaged, and once before by somebody else. She was seen first by Dr. Edward Reynolds. The head was found high: occiput right posterior with extension: there was a deep laceration of the cervix down to the

¹ See page 82 of the Journal.

² See page 80 of the Journal.

vaginal junction. Dr. Reynolds and I both realized the great danger of internal podalic version, and in consideration of the fact that the family was Roman Catholic, and the child living, and that we did not want to do craniotomy if possible to avoid it, we decided after some considerable trepidation, that we would undertake version and take our chances. As a result, the uterus was ruptured. It was not known that the rupture had occurred until it was sought to remove the placenta, and it was found there was no placenta in the uterus. It was found to have disappeared through a rent in the right wall of the uterus rather low down, and was found among the intestines, and removed through the rent.

I wish to speak briefly in reference to the propriety of laparotomy in such cases. There are three great dangers after rupture — shock, hemorrhage and sepsis. Of course, the septic danger comes later, but if a woman survives the primary shock and primary hemorrhage, if she has one, there is one danger left to her it seems to me, and that is the danger from sepsis. Now, if men are aseptic, that danger ought to be entirely removed. If she has shock, that must be treated, and it seems to me it is rarely necessary for the patient to die from shock. Of course, they do sometimes. In the matter of hemorrhage, if the hemorrhage is severe, the patient may die before anything can be done; but if the hemorrhage is slight, then there is time to make preparation for laparotomy to secure the bleeding points. In this case there was no hemorrhage that could be detected. We concluded there was no internal bleeding. There remained the possibilities of sepsis. The uterus had firmly contracted, the rent closed, and we decided to wait. She had peritonitis, and was treated with opium. I did not think there was sepsis at the time. It seemed like a traumatic peritonitis, localized. At the end of two weeks she was dismissed by the medical student who had the immediate care of the case. At the end of a month she said she was as well as ever. I will simply state the fact that after about two years she had another child, and she insisted on being delivered on the hands and knees so that the student was unable to say what the position of the child was. The child was born without assistance. I got there before the placenta came away, and thought I felt a cicatricial ridge along the right side of the uterus where the tear was. She made a good recovery.

As regards the treatment of obstetrical ruptures of the uterus, I stated in my paper upon this subject my own opinion at that time, and I do not think I have any reason to alter it.

Parvin, in the discussion of the report of my second case, said: "There is no treatment for ruptures of the uterus in childbirth, and the question to be settled is in what cases should the abdomen be opened, and in what simple drainage by the vagina can be relied upon; certainly, the results obtained by the latter in recent years are very encouraging. Probably the solution of the question is this, that where the tear is in such a position that vaginal drainage is perfect, the abdomen need not be opened; but if such drainage is impossible, or imperfect, then section is indicated."

It seems to me that that covers the subject well. If then, as Frommel found in some of his cases, that much detritus has not escaped into the abdominal cavity, if the child has not escaped there either wholly or in large part, and if a large amount of bleeding has not taken place making it necessary to clean out large

quantities of blood-clots and tie the bleeding points, it seems to me much can be expected from the treatment by vaginal drainage. If, on the other hand, as in Dr. Haven's case, or in most of the non-puerperal cases, there is sepsis, as unfortunately there is in many of them, then it seems to me there is nothing to be done but laparotomy, suture of the uterus and thorough flushing of the abdominal cavity; but I feel it is not to be taken as a foregone conclusion that because the uterus is ruptured therefore there must be laparotomy. Such cases will often recover without laparotomy, provided you can have good drainage.

DR. M. H. RICHARDSON: It seems to me that the most important point in both forms of ruptured uterus and in ruptures of abdominal viscera generally, is the matter of sepsis. I have always considered it very difficult to make the utero-vaginal canal perfectly aseptic. The dangers of septic infection are certainly great in abdominal hysterectomies, after the amputation of the uterus, where the uterine canal is exposed. I think the rules that have been laid down by Dr. Reynolds for the treatment of ruptured uterus, are very satisfactory. I do not agree with those who say that there is not considerable danger from shock in laparotomy. In my experience the danger is great in certain cases, proportional, perhaps, to the amount of exhaustion and anemia present from the condition calling for the operation. In regard to drainage, I think that we have a most satisfactory form in vaginal hysterectomy. I saw the case Dr. Strong has reported. In this case there was a septic peritonitis of the fulminating and rapidly fatal variety, which might have been avoided had this woman received the proper drainage and aseptic care in the beginning. This might have been accomplished by the vaginal method. I have had no experience with rupture of the utero-vaginal canal into the abdominal cavity, except in one case where a woman sat down upon a glass syringe and made a hole in the posterior cul-de-sac. She recovered after suture.

In my opinion a general septic peritonitis from whatever cause, is essentially a fatal disease whether you treat it by laparotomy or salines or by any other method. I refer to those cases of rapidly-spreading peritonitis, accompanied by total peristaltic paralysis with continuous and uncontrollable vomiting, and my remarks in this connection apply to those cases in which I have opened the abdominal cavity before or after death, and have found physical evidence of septic general peritonitis. I have yet to see any case of this kind recover under any form of treatment, surgical or medical. In other cases with similar symptoms, where the diagnosis has been unverified either by operation or autopsy, I have met with the same disastrous results whether they have been treated by opium or by salines. I have seen such results in perforations of the stomach and intestines, appendicitis, and after laparotomies. In all there has been the same rapid progress to a fatal end, unchecked by any method of treatment whatsoever.

DR. HAVEN: Dr. Reynolds spoke of statistics regarding ruptures treated by drainage and by laparotomy. He was, I think, particularly fortunate in the cases reported to-night. The statistics of all the cases I could find showed a mortality of about fifty per cent. when treated by drainage; on the contrary, Winckel had fourteen cases of rupture where he did laparotomy and four died. Besides that I have notes of eight cases

with three deaths, in all twenty-two cases with seven deaths, or about sixty-six per cent. of recoveries.

Dr. Reynolds, I understood, would wait to see if hemorrhage occurred after rupture. It seems to me that is a dangerous thing to do. The uterus is an erectile organ, and although it may be firmly contracted at one time, yet in the course of a half-hour or an hour it may be quite large and relaxed, permitting a short hemorrhage to take place. You see this in the uterus after delivery, where it is hard and quite small at one time and a short time later quite relaxed.

As far as the treatment of septic peritonitis is concerned, I fully agree with him that the open treatment is the treatment *par excellence*. I have seen a number of cases among the out-patients of the Lying-in Hospital, and I have never yet seen a case that did not get well under salines and the open treatment, I do not doubt, however, that there are some where this treatment is of no avail.

In regard to Dr. Green's case, I think there is one thing to be considered, namely, the fibroids which were present; disturbing them might have caused a great deal of hemorrhage, only to be controlled by total extirpation of the organ.

As far as the danger from sepsis is concerned, I do not think it is augmented at all by the escape of liquor amnii into the abdominal cavity. In the cases reported in which this occurred it made no difference. The escape of a macerated fetus, on the other hand, was followed in almost every case by death.

One other thing that should be remembered is that the gut may come down through the tear and become gangrenous. This may take place several hours after the tear has occurred, and is one source of danger, which I think has not received due consideration.

I agree with Dr. Strong in regard to the fact that punctured wounds of the uterus do not call for laparotomy. I think such cases should be left entirely to nature.

DR. REYNOLDS: I was a little surprised to hear two or three gentlemen speak of the cavity of the vagina and uterus as necessarily septic. My own experience with it obstetrically and surgically is that the vagina is about as readily cleansed as the abdominal wall. I think the fact that we are accustomed to expect asepsis in vaginal hysterectomy is good evidence of that fact.

In regard to one of Dr. Richardson's remarks, I should feel that in any case in which the drainage was not satisfactory that I should wish to open the abdomen for the treatment of septic peritonitis as soon as I felt that it was getting beyond the control of other means.

In response to Dr. Richardson's statement that he had never seen septic peritonitis, when once general and well underway, influenced by any form of treatment, I should like to speak of the most strongly illustrative case out of a good many that I have seen. I was called two or three years ago to one of the outpatients of the Lying-in Hospital, who had been by misunderstanding, neglected for about forty-eight hours after sepsis commenced. The interior of the uterus was septic, the woman lying on the bed with knees drawn up, abdomen tympanitic and swollen, vomiting constant, temperature 103° or 104° . I thought she was going to die without question. I curedtted the uterus and directed the husband to give her a teaspoonful of Epsom salts in one-half tumblerful

of water every two hours until the bowels moved. I called the next morning and found the woman lying flat in bed, and comfortable, pain gone, vomiting stopped, abdomen flat, etc. The husband said he had given her two teaspoonfuls every hour, and had counted the movements up to twenty, when he stopped.

As regards the statistics given by Dr. Haven, in which only five per cent. recovered without laparotomy, it is my impression that the statistics date back into the pre-aseptic period.

DR. HAVEN: There has been no difference in the statistics in the two periods.

DR. REYNOLDS: As regards the question of waiting to see whether hemorrhage would occur, that is, whether reaction occurred or not, in the four cases I have seen, reaction occurred distinctly, there being no hemorrhage, in fifteen or twenty minutes, and I do not think you would get ready to do laparotomy under an hour.

DR. M. H. RICHARDSON AND DR. J. G. MUMFORD reported a case of

CYST OF THE PANCREAS.³

DR. CUSHING asked whether any cyst fluid escaped into the abdominal cavity and whether there was any drainage.

DR. RICHARDSON: I think some must have escaped, but no considerable quantity. It was impossible entirely to prevent the escape of fluid. This was washed out by a superficial flushing. There was no drainage except of the cyst itself. In both cases the tumor was, to a certain extent, adherent to the transverse colon, so that the fluid did not escape freely into the abdominal cavity. It was impossible to prevent the escape of a small amount, however, but it did not seem to do any harm.

DR. E. W. CUSHING reported a case of
ABDOMINAL AND VAGINAL SECTION FOR UTERINE
TUMOR.⁴

DR. CABOT asked Dr. Cushing how he cleansed his hands after vaginal and before abdominal operation.

DR. CUSHING: With corrosive sublimate.

DR. A. T. CABOT said that during the past summer he had been using peroxide of hydrogen in a fifteen volume solution quite extensively for the cleansing of his hands. He had found it especially useful in those cases where he was obliged to make a vaginal examination, and to follow it at once by a laparotomy. Cultures made from the hand by Dr. A. K. Stone seemed to show that the washing with peroxide of hydrogen added very considerably to the safety. This does not give any more thorough disinfection than washing with permanganate of potash in a saturated solution, and afterwards decolorizing the hands with oxalic acid; it has, however, the great advantage of being the quicker method, as the peroxide does not have any coloring effect on the hands.

Dr. Cabot said that he was glad to hear Dr. Cushing speak of the importance of curetting and cauterizing fungous growths of the cervix in feeble persons, as a preliminary to vaginal hysterectomy, thus giving the patient a chance to pick up strength before the severer operation. He said he had followed this plan in several cases with a good deal of satisfaction, and found that the previous removal of the cervix did not add to the difficulty of the vaginal extirpation of the uterus.

³ See page 86 of the Journal.

⁴ See page 85 of the Journal.

DR. CUSHING: I sometimes use creolin or naphthalin in connection with sublimate.

DR. REYNOLDS: I should like to speak of my experience with creolin. When creolin is used in the vagina it dissolves the vaginal mucous so thoroughly that it leaves the vaginal wall macroscopically clean and accessible to the action of the corrosive, which, if used first, coagulates the mucus and leaves a layer of it over the vaginal wall. I take a gauze sponge soaked in creolin and scrub the vagina with it before an examination is made, and I think it not only saves dirt on the fingers but makes it possible to aseptize the vagina afterwards. It is in itself a good antiseptic.

DR. CUSHING then showed a compound antiseptic powder.

AMERICAN ORTHOPÆDIC ASSOCIATION.

WASHINGTON, SEPTEMBER 23, 1891.

DISCUSSION ON CONGENITAL DISLOCATION OF THE HIP, WITH NEW APPARATUS FOR ITS TREATMENT,¹
by A. M. PHELPS, M.D., of New York.

DR. HENRY LING TAYLOR, of New York, said that there were at least two classes of congenital luxations at the hip, namely, those in which the luxation is produced at the time of labor, and those in which the condition is caused by an arrest of the growth of the acetabulum. He had had a case in which the luxation was unilateral, and in which there was a history of version and forcible delivery by traction on the luxated extremity. About six years ago he had presented to the New York Pathological Society a specimen of congenital dislocation which he had removed from a minute aged man. In this case, not only were the acetabula shallow and narrow, but the entire pelvis was very light, and portions of the bones were as thin as an eggshell. Besides these, there was a fissure of the sacrum, giving additional evidence of the imperfect development of the whole pelvis.

DR. N. M. SHAFFER, of New York, had had two cases of unilateral congenital dislocation in children, which he had treated by the straight traction splint until the maximum amount of lengthening had been obtained, when a modified apparatus with a joint at the knee and a perineal support was employed. The best result had been obtained in a case which he had seen with Dr. Saads, and in which an attempt was made, under ether, to reduce the dislocation. After using considerable force this plan of reduction was found not to be feasible, but the manipulation produced, so to speak, an adhesive inflammation which was beneficial, and at the end of two years there was only about half an inch of shortening and a very firm joint.

DR. CHARLES C. FOSTER, of Cambridge, said that the best recorded result had been obtained in the case treated by Dr. Brown. He had assisted in the treatment of that case, and could speak very positively of the great amount of faithful, patient work which had been required to bring about this result. The child belonged to a family a number of whose members had loose joints. The femur could be rubbed all over the pelvis, and there was an acetabulum so slight as to be almost inappreciable. The child was put to bed, and pressure applied to keep the bone in the

acetabulum, and then by an arrangement of straps the limb was exercised in this position several times every day. As soon as there was evidence of deepening of the acetabulum, these exercises were modified. No splint was used at any time, but when the child was removed from bed it was placed in a sort of go-cart, supported on a saddle, so that it could be allowed very gradually to bear more and more weight upon the foot.

DR. SAMUEL KETCH, of New York, said that about two years ago, he reported in Keating's *Encyclopaedia of the Diseases of Children*, about fifty-six cases of congenital dislocation of various joints, discussing in succession the bearing upon this condition of heredity, parturition, location and treatment. Heredity did not appear to be an etiological factor. The vast majority of labors in these cases were absolutely normal, showing the fallacy of the old idea advocated by Mr. Brodhurst concerning parturition as a cause. In this collection of cases there were no anterior dislocations. He had been unable to determine whether these cases were examples of simple malformation or of lack of development. One case was very remarkable, inasmuch as it was an instance of congenital dislocation of almost every joint in the body. In this boy there were decided evidence of rickets. Regarding mechanical treatment, he was of the opinion that our chief aim should be to improve the gait, and secure a new position for the head of the bone giving greater length to the extremity. An ordinary long traction splint with the addition of a pad and surcingle to hold the head of the bone in position, will prove satisfactory in most cases.

DR. ALBERT HOFFA, of Würzburg, said that the best that could be obtained by mechanical treatment was to pull down the head of the femur, and so improve the patient's gait. He thought the best results would be obtained by operation. The chief impediment to reduction is the shortening of the muscles running from the pelvis to the leg, owing to the trochanter major being nearer to the iliac crest than in the normal subject. The posterior leg muscles are also shortened. The reduction in adult cases is so difficult, that he would not advise attempting operative reduction in patients over eight or ten years of age. In children of from three to six years, the reduction is very easy. After cutting off the joint and separating all the soft parts from the upper end of the femur, it is very easy to pull down the femoral head until it is in the position of the old acetabulum. It is desirable next to enlarge this acetabulum. It has been said that it is impossible to do this, but by reference to the specimen exhibited by Dr. Phelps, it will be seen that the acetabulum is the thickest part of the pelvis, and there is no difficulty whatever in making a sufficiently deep acetabulum. In his first operations he used a periosteal flap which he sewed over the trochanter major, but subsequently he found that it was not necessary to make this flap, for, if the cavity be sufficiently deep, there is no danger of the head of the bone coming down. The chief feature of his operation consisted in saving the head, and thereby obtaining a healthy joint. His first operations were performed about two years ago, and about two months since he examined the first case and found a perfectly movable joint and the absence of the awkward gait characteristic of congenital dislocation. Even lordosis was absent. In all of his cases he had found a rudi-

¹ See page 77 of the Journal.

mentary acetabulum, which was triangular in shape. Some cases had been reported in France in which the site of the acetabulum was occupied by an exostosis, but no such condition had existed in any of his cases.

DR. HOWARD MARSH, of England, called attention to the statement which had been made concerning the absence of any causal relation between these dislocations and heredity. He did not consider that this remark correctly represented the subject, for, many years ago, he had had a case of congenital dislocation of the hip brought to him whose mother also had the same condition with very free telescopic movement on the pelvic wall. The condition found in the child was exactly similar to that shown in the specimen just presented. The anterior position is the most favorable one because in these cases there is no lordosis, for the lordosis depends upon the extent to which the femur is displaced backward upon the walls of the pelvis. Congenital dislocations should be divided into (1) those in which the bone slips about on the walls of the pelvis, and (2) those in which it is fixed. In the majority of cases it is so fixed, and under these circumstances he did not think operative measures should be undertaken. Such measures were more properly applicable to cases where the head of the femur is high up and movable.

DR. JOHN RIDLOW, of New York, had had an opportunity of seeing one of Dr. Phelps's cases. He had also had two cases of this condition in his own practice, and he desired to direct attention to the uselessness of mechanical treatment. Dr. Brown's case was a posterior one, and the result was good, and this was what might be expected. In his own first case, after the use of traction by the Taylor splint in bed for a year, until the shortening had been reduced, on placing the head of the bone over the acetabulum the entire limb was rotated inwards about ninety degrees. In the process of growth from birth to the age of eleven years, a distortion of the neck had occurred, and, therefore, simply replacing the bone only resulted in placing the feet at right angles—a worse condition than at the beginning. In these cases mechanical treatment is obviously of no benefit. He thought anterior dislocations more hopeless than posterior ones under mechanical treatment.

DR. R. H. SAYRE, of New York, had had a case of dislocation on the dorsum of the ilium. Here he had brought down the head on to the acetabulum, but it now had a tendency to become a pubic dislocation. He uses an instrument similar to the long traction splint, but with a joint at the pelvis, so that the head can, if desired, make movements at the hip-joint with the idea of assisting in creating a new acetabulum. He thought with Dr. Foster, that a grinding motion is an important factor in securing such a result, provided the head of the bone could be retained in the proper position. The iron ring in Dr. Phelps's apparatus he did not think would prove as good in practice as a strap, which could be removed from time to time. The cases in which the bone remained in a fixed position were best left alone.

DR. E. H. BRADFORD, of Boston, referred to a case which he had reported on a previous occasion, in which he had been using a very light portable splint, which he desired to exhibit to the Association.

DR. DE FOREST WILLARD, of Philadelphia, considered the movable cases the most hopeful ones for operation. In cases where there is slight movement,

it is better to combine operative and mechanical treatment, beginning first with rather forcible attempts at reduction, in order to produce inflammation, and then making continuous horizontal traction, as well as employing systematic exercises with the idea of exciting sufficient inflammation to hold it in place. Lastly came the use of a retaining splint.

DR. L. A. WEIGEL, of Rochester, during the past two years had seen three cases of congenital misplacement, two of them being unilateral, and in all of them, by simple traction upon the leg, the limb could be brought down to the normal length, and there was a perceptible play on striking the rudimentary acetabulum. In some cases the muscles on the affected side were rather imperfectly developed. He did not think that in old cases the shortening could be overcome.

DR. PHELPS, in closing the discussion, said, regarding the etiology, he had traced cases and had found that heredity appeared to play an important part. After his splint has been worn for a year the upper part of it is removed to allow of motion, and the patient walks upon it, discarding the crutches. The vast majority of the cases he believed were really dislocations *in utero* or at birth, with subsequent non-development of the acetabulum, and not congenital non-development of the acetabulum allowing of misplacement of the head of the femur, as has been taught and still is believed by a large portion of the profession. The pathological specimen presented appeared to confirm that idea.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

FOURTH Annual Meeting, held in Richmond, Va., November 10, 11 and 12, 1891.

FIRST DAY.—MORNING SESSION.

The Association convened in the hall of the Young Men's Christian Association, and was called to order by the President, DR. L. S. McMURTRY, of Louisville, Ky., at 10 A. M. Prayer was offered by the Rev. D. M. Hooge.

The first paper read was by DR. J. W. LONG, of Randleman, N. C., entitled,

ALBUMINURIA; ITS RELATION TO SURGICAL OPERATIONS.

He drew the following conclusions:

Neither ether nor chloroform injures healthy kidneys, as a rule. When renal disturbances from the use of an anesthetic, the kidneys being healthy, do occur, they are due rather to prolonged narcosis, exposure of the patient, or perhaps to the combined influences of the operation and the anesthetic. A mild degree of albuminuria or nephritis, especially if recent, is not a contraindication to the use of chloroform or ether. Even in the presence of advanced and extensive renal changes, an anesthetic may be employed, provided the patient or family are advised of the additional risk. Of the two anesthetics usually employed, it is yet a mooted question as to which is the safer so far as the kidneys are concerned, unless it be in obstetrical operations. While it is by no means the rule, profound functional disturbances and even organic lesions may be induced by an operation, apart from the influence of the anesthetic. Such renal changes are due to reflex sympathetic action of sepsis, or both.

Operations in certain regions, notably the abdominal, genito-urinary, about the mouth and rectum, are specially liable to produce renal complications. A healthy condition of the kidneys, minimizes, but does not obviate, the danger referred to. Albuminuria is always indicative of renal lesions, and should be regarded with distrust; but it is not positive contraindication to an operation. When albuminuria is associated with other evidences of advanced renal changes, no operation should be undertaken without first candidly stating to the patient, or friends, the dangers incident to the condition of the kidneys. Paradoxical as it may seem, an operation will sometimes relieve an albuminuria due to acute affections. No surgeon is justified in undertaking an operation without first knowing the state of his patient's kidneys.

FIRST DAY.—AFTERNOON SESSION.

DR. JOSEPH PRICE, of Philadelphia, Pa., read a paper on

COMPLICATIONS IN PELVIC SURGERY, AND HOW TO DEAL WITH THEM.

The author's reasons for choosing this subject were that the importance of recognizing the part that complications play in the work of the surgeon, are not appreciated by the generality of medical men, by general surgeons, and least of all, by the tyro in surgery, and by those who are anxious to begin their surgical investigations and trial-trips by an entrance into the domain of abdominal or pelvic surgery. The complications in this special branch of surgery are primarily those of surgery in general, with many things superadded to render them formidable. It may be the intention of the surgeon to remove the appendages for a bleeding fibroid. In ordinary operations the removal of the uterine appendages is to the skilled abdominal or pelvic surgeon one of the simplest of undertakings. If, however, he attempts to accomplish their removal, without holding in mind the complications that, as a rule, exist, or if he is a neophyte or an experimental dabbler, he will find too late in many cases, that he has attempted an operation that he cannot finish, or if he does complete it, he has also sacrificed his patient, or rendered her worse off than before. In other words, to accomplish a cure, he must abandon removal of the appendages and perform hysterectomy, which has but little in common with the operation originally proposed. If this idea is still further carried out, we shall find that complications do not confine themselves to one system of organs, but extend to all surrounding structures by reason of inflammatory adhesions. This is true of the bladder, ureters, intestine, omentum, stomach and liver. Adhesions are the bane of abdominal and pelvic surgery, and hence we see that the greatest mistakes and failures are made by those who, from a knowledge of abdominal surgery simply, have attempted to deal with pelvic inflammations. The abdominal surgeons who can be counted as really successful pelvic surgeons are therefore few. This is said with no intention of detracting from the importance of abdominal surgery. The strictly abdominal organs must always enter largely into the domain of surgery.

With regard to irrigation, we must get out of our heads the idea that it is dangerous. Very often in the writer's experience has hot water brought about a speedy reaction in patients whose lives were almost despaired of. We are told that cases do not need

flushing, that they do badly under it. Dr. Price believes that they do need flushing if they are desperate cases, and if they do badly they do so, not on account of the flushing, but because of the operation that preceded it. Next, we have a resort in packing. Gauze packing accurately applied to the bleeding or oozing surfaces, so that it can be removed without interfering with the otherwise completed operation, is of infinite value in hemorrhage. It can be suffered to remain indefinitely almost, broadly speaking; at least, up to sixty or seventy hours, if absolutely clean and fresh, either salicylated or iodoformized. The drainage tube controls hemorrhage. The drainage-tube is currently spoken of as if it were an annex to pelvic surgery, easily dispensed with. The writer uses it almost without exception in adhesions. His results are better than those obtained without its use.

The plea of the paper was for absolutely exact, painstaking work that shall leave nothing for regret, nothing to do over, nothing to explain, but shall stand out in the light of results as justifiable, scientific and perfect when put beside methods that palliate without curing, and are no more a part of real surgery than is hypnotism refreshing sleep.

DR. CORNELIUS KOLLOCK, of Cheraw, S. C., read a paper entitled,

OVARIAN CYSTS, WITH THE REPORT OF A CASE OF OVARIOTOMY IN A YOUNG GIRL.

He said the causes of ovarian cyst seemed to be still a question *sub judice* in the minds of those who are the most progressive and who have made the greatest advancement in the science of gynecology. Various theories have been put forth by those of larger experience, who are earnest seekers after truth, and who are patient investigators of all unnatural and morbid phenomena. But no satisfactory decision has been obtained from all the patient and searching investigation that has been made as to the cause of this singular, unaccountable and sometimes fatal neoplasm, characterized by histological diversity from the viscera of which it is a production. Some of the theories seemed, at a glance, to be plausible, but upon close study we find they will not bear inspection.

Miss C. L. H., was eleven years, eight months, and nineteen days old; general health perfect in every particular. Menstruation first appeared about two months before she was eleven years of age, and continued with perfect regularity, never excessive or scant, nor was it accompanied by the slightest pain. Her physique was fine in every way. Though less than twelve years of age, she weighed 135 pounds; was strong and active. Her breasts are full and large as those of a woman at thirty-five. She was very handsome, had a fine voice and sang beautifully. She was very intellectual, and stood at the head in all her classes in a large high school. I saw her for the first time on the 9th of January, 1891. The abdomen was greatly distended, but facies ovariana was not very pronounced. I was confident she had an ovarian cyst, and I rather suspected she had two. On the 6th of January I made a section about three inches below the umbilicus, and removed a cyst from each side, the one on the left weighing twelve pounds, and that on the right seven pounds. A more prompt and complete recovery the writer had never seen from the simplest operation. Union by first intention took place, and the sutures (silver wire) were removed at the end of the seventh

day. In twelve days she was up and about her room, and on the twenty-third day after the operation returned to her home, a distance of 200 miles.

It is now ten months since double ovariotomy was done on this young girl, and there has not been the slightest discharge from her of any kind. At each menstrual period, there was considerable commotion in the pelvic region, attended with some uneasiness in the head and back; but at each period these symptoms decreased, and the last two were accompanied by no pain whatever. The remarkable physical development in this case still continues. It is now ten months since the operation. She has gained six pounds in weight, weighing 141 pounds, and looks better than before she underwent ovariotomy. This young girl came from the purest and healthiest stock of people in this region. Not an individual on either side was ever known to have any constitutional trouble of any kind. Her mother and family physician say they never knew her to be the least indisposed in any way.

SECOND DAY.

DR. WILLIAM WARREN POTTER, of Buffalo, N. Y., read a paper entitled,

A MEDICO-LEGAL ASPECT TO PELVIC INFLAMMATION, in which he said that pelvic inflammations in women have been described, discussed and debated from almost every point of view imaginable, until our periodical medical literature is flooded with articles on the subject, and medical society transactions are teeming and bristling with papers pertaining thereto. So far, however, he had not observed that any one had undertaken to discuss these intra-pelvic conditions from a medico-legal standpoint. It was his purpose to present that aspect of the question, taking for his text a case that developed an interesting problem in that respect.

After giving a history of the case, Dr. Potter emphasized the following points:

(1) The intimate anatomical relations between the pelvic organs and the larger joints of the lower extremities, especially the hip and knee joints; render them liable to reflexes.

(2) The importance of careful diagnosis at the outset lest grave errors, and possible disastrous consequences may result from treatment.

(3) The medico-legal bearing that errors of judgment in diagnosis and treatment may have in relation to the patient, as well as upon the reputation of the physician.

THE MEDICO-LEGAL ASPECT OF INTESTINAL SURGERY.

DR. JOHN D. S. DAVIS, of Birmingham, Ala., read a paper on this subject. He said many physicians and surgeons who condemn all mechanical aids for intestinal repair, know not how to use them; never saw them used; refuse to endorse a resection for gunshot or stab wounds; have been known to go in the witness-box for purposes of condemnation and disapproval when they knew no more about intestinal surgery than a wild Indian about school-teaching.

In this day of specialties in medicine, but few general surgeons have either the appreciation, opportunity or disposition to qualify themselves as expert operators in intestinal surgery; but many — to the discredit of the profession — voluntarily appear in the criminal courts of the country pretending to be such, wise and proficient. One of the greatest professional sins of the day is perverted knowledge of concealed ignorance.

It is too often that physicians and surgeons weaken and invalidate their opinions to a greater or less degree by unscrupulous interest in behalf of those employing them, a fact cunningly turned to advantage for defendants in criminal prosecution, and for like reason may become dangerous to the operators they oppose and envy. To be able to do a laparotomy for stab or gunshot wounds of the intestines, inflicted by one with murderous intent and be able to evade civil and criminal liability, the operator must be able to show evidence of ordinary surgical knowledge in the requirement of the special operation to be performed; he must possess ordinary surgical ability for doing the special operation to be performed; he must exercise ordinary prudence in performing the special operation to be done, as to time, place, antiseptics, asepsis, assistance, nurses, and after-treatment; he must perform the special operation in an ordinary skilful manner. Hence, to prevent confusion, it will be well, if possible, to determine what constitutes ordinary surgical knowledge, ability, prudence and skill. Upon these depend the whole medico-legal status of the intestinal surgeon, and upon which the expert should be required to depend also. According to the practices and rulings of courts in this country, the word ordinary, in its surgical adjectiveness, means that the surgeon shall be capable of and exercise that surgical knowledge, ability, prudence, and skill with which a fair proportion of the surgeons of his given locality are endowed, and not that of the highest lights of his profession.

The President, DR. L. S. McMURTRY, of Louisville, Ky., delivered the annual address, taking for his subject

A PLEA FOR PROGRESSIVE SURGERY.

He said within fifteen years the entire practice of surgery has been revolutionized. New methods have been introduced and new regions invaded. Comparatively recent teachings have become obsolete in practice and modern treatises recast. The science and art of gynecology, which a few years since was limited to a small and narrow field, has grown into a great branch of medical science and practice. Formerly divided between midwifery and surgery, as a minor branch of one or both, gynecology has become an independent and essential department of the healing art.

When Marion Sims announced, through the columns of the *British Medical Journal*, that he believed the proper course of treatment in every case of gunshot wound of the abdomen is to open the abdomen, search for the bleeding points and secure them, and suture intestinal perforations, he was pronounced by many eminent surgeons to be a dreamer. The suggestion of Sims was most timely, and shortly afterwards Bull successfully executed the operation. For years the treatment of opium in full doses had been pursued, with death in waiting. Now there is scarcely a State in the Union in which one or more patients have not been rescued from certain death by prompt resort to operative treatment. He mentioned these circumstances to illustrate and emphasize the point that surgery is advanced more by the aggressiveness of the surgeon than by timidity. In the face of desperate conditions of disease and injury, where there can be no safety whatever in delay and palliation, the only treatment worthy of consideration is the aggressive course which promises success. Under such conditions the most heroic surgery is conservative, and any other course is not conservative.

DR. JOSEPH TABER JOHNSON, of Washington, D. C., followed with a paper on

THE GROWTH OF FIBROID TUMORS OF THE UTERUS AFTER THE MENOPAUSE.

He said the object of the paper was to put on record cases and opinions in opposition to a common view of this important subject, and to aid in recasting our views and in modifying our practice.

He had within the past five years seen at least a dozen women with large growing and troublesome fibroid tumors of the uterus, who were over fifty years of age; some of them over sixty. These women had been assured by their physicians, that, if they could get along somehow until after the change of life, their tumors would not only stop growing, but they would lessen in size, and probably go away altogether; at least, the troublesome and dangerous symptoms would disappear. They had been advised against any radical operation, and encouraged to believe that as they grew older, they would get entirely well. In perhaps the majority of cases this might prove to be very good advice; but the point which the author wishes to make is that as we are now better acquainted with the history and behavior of these tumors, that this is no longer safe advice to give. We cannot assure any woman that her tumor may not prove to be one of the exceptional cases, and that it may not grow more rapidly after the menopause than it did before, or that it may not present complications equally distressing and disastrous. When from forty to fifty per cent. of women subjected to supra-vaginal hysterectomy died from the effects of the operation, this was very safe and conservative counsel to follow. The possible dangers of the tumor were not equal to the probable dangers of the operation.

The "rule" stated in the text-books that uterine fibromata cease to grow after the menopause, has many more exceptions than is generally supposed. When they continue to grow after the menopause, they pursue a more disastrous course than before. They more frequently become cystic, calcareous or have abscesses develop in them. These conditions, requiring operation according to well-known rules of surgery, the patients are in a less favorable condition for recovery than before the menopause. If the above conclusions are admitted to be true, it must follow that they furnish additional indications for more frequent and early resort to the radical operation. In the hands of the best operators in cases where a pedicle can be secured, the mortality of supra-vaginal hysterectomy is rapidly approaching that of ovariotomy.

DR. C. A. L. REED, of Cincinnati, O., read a paper on

THE SURGICAL TREATMENT OF ANTERIOR DISPLACEMENTS OF THE UTERUS.

Anterior displacements of the uterus, when they exist to the pathological degree, are the opprobria of gynecology. It is indeed true that many wombs lean far forward without inducing symptoms, but it is likewise true that many of them that are thus malposed do entail symptoms, objective and subjective, that frequently baffle our resources. It is a misfortune, too, that many of all the displacements to which the womb is liable, those in which the organ deviates anteriorly to the normal axis, are vastly the more prevalent. Thus, in an aggregate of 494 cases by Nonat, Meadows, Scan-

zoni, Valleix and Hewitt, quoted by Thomas and Mundé, there were 294 ante-flexions, and 180 retro-flexions; while Mundé himself reports 294 ante-flexions, 33 retro-flexions and 10 latero-flexions in a total of 337 cases. As the latter authority is disposed to look upon ante-flexions in their minor stages as a physiological (even congenital) condition, it is legitimate to infer that his statistics are based upon observations of displacements in the pathological degree. The conclusion is forced upon us, then, that of all the displacements of the uterus, those of the anterior variety are more frequent; while the records of practice will force us, likewise, to the conclusion that of all the womb displacements those of the anterior variety are less amenable to treatment than are any of the others.

In the treatment, the term *surgical* is employed in contradistinction to any method of treatment by pessaries, tamponnade or electricity. It may be premised that all surgical methods devised for the relief of these conditions should be directed, first, to the removal, when practicable, of the causes of the diseased conditions proper, and finally, to the readjustment of the diseased organs to the normal physical forces of the pelvis.

In conclusion, the author desired the Association to consider:

- (1) The etiological relationship of contracture of the utero-sacral ligaments to ante-fexion.
- (2) The possibility of overcoming this condition by such conservative measures as rest, pelvic depletion and appropriate manipulations.
- (3) The feasibility of removing the obstructive dysmenorrhea and the sterility usually incident to these cases by the plastic operation which he had described.
- (4) The inexpediency of forcible dilatation for the relief of these cases, and its inability to effect a permanent cure.

THE PART THE SHOULDERS PLAY IN PRODUCING LACERATION OF THE PERINEUM, WITH SUGGESTIONS FOR ITS PREVENTION.

This was the title of a paper read by DR. W. D. HAGGARD, of Nashville, Tennessee, in which he made the following suggestions:

The patient should occupy the left lateral decubitus, at least during the second stage of labor. Overcome the rigidity of the vulvar outlet by the judicious use of chloroform. The presenting part of the child should be supported and not the perineum, during the passage of the head and shoulders. Support the head by pressing it well up under the symphysis pubis, by placing the right thumb in the rectum and fingers of right hand extended over the occiput. To retard the exit of the shoulders, pressure should be applied to the trunk and shoulder by placing the index and middle finger of the left hand in the rectum, with the thumb in the vagina to restrain its exit. Support the head and neck by pressure well over the symphysis pubis.

(To be continued.)

A PHARMACEUTICAL CONGRESS. — The World's Congress Auxiliary has issued the prospectus of a pharmaceutical congress, in which it invites all pharmaceutical societies and workers throughout the world to participate, to be held in Chicago, in May or June, 1893. It is suggested that the regular meetings of all pharmaceutical associations and societies be held in connection with this congress.

Recent Literature.

A Clinical Text-Book of Medical Diagnosis for Physicians and Students, Based on the Most Recent Methods of Examination. By OSWALD VIERORDT, M.D., Professor of Medicine at the University of Heidelberg. Authorized Translation, from the Second Improved and Enlarged German Edition, with Additions, by FRANCIS H. STUART, A.M., M.D. With one hundred and seventy-eight illustrations. Philadelphia: W. B. Saunders. 1891.

This book, the first German edition of which was published in 1888, was undertaken by the author as the result of the experience of more than four years of work as teacher of diagnosis in the medical clinic at the University of Leipsic.

The second edition gives the latest methods for examination of the contents of the stomach and of the organs of sense. In teaching the use of instruments and methods of precision, the author, we are glad to note, does not omit to urge the importance of the simple use of the senses, and of individualizing each case.

The book is an excellent one, and fills well a place hitherto unoccupied among medical publications in English. The translator's and the publisher's work is well done.

Zeitschrift für Orthopädische Chirurgie. Stuttgart: Ferdinand Enke.

In welcoming a new magazine, it is customary to state, by way of introduction, the need of such a publication; and in fact there have been but few journals devoted exclusively to orthopedic surgery, and this, we think, is the first to appear in Germany. Under the able editorship of Dr. Albert Hoffa, of Würzburg, it is to be expected that this magazine will have a brilliant future, and certainly, if we can judge from the opening number, it will fill a useful place. It begins with an article by Lorenz on the treatment of lateral curvature, which is both original and of value. This is followed by several articles of interest, among them, one by Hoffa, describing new and original means of correction of deformity of rotation in lateral curvature. For details the reader will have to be referred to the article itself.

In the introductory notice of the editor as a preface to his journal, Dr. Hoffa frankly states his opinion in regard to the position of orthopedic surgery as a specialty; a subject which, as is the case with all new specialties, has given rise to some discussion. He is quite positive in the belief that orthopedic surgery, if restricted entirely to mechanical appliances, will not be destined to a brilliant future, and, in fact, is bound to degenerate, as it has hitherto done in the hands of previous orthopedic surgeons of the past generation who limited themselves to a narrow interpretation of their specialties. In fact, Hoffa is of the opinion that orthopedic surgery would not exist if it were not for the impulse given to it by Delpech, who first added to it operative measures of tenotomy. At the present time when this specialty has been reinforced by new operative procedures which require special skill and experience, the branch deserves renewed attention; but attention should be paid by those who are thoroughly schooled surgeons before they have devoted themselves to a special branch. The magazine is one which, if it maintains the standard of its first number, will be of great service in the medical world.

THE BOSTON

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THE NERVOUS AND MENTAL PHENOMENA AND SEQUELAE OF INFLUENZA.

It has long been recognized that the poison of influenza in a large class of cases manifests its effects upon the patient especially by its influence upon the nervous system. Whether the cardio-pulmonary and digestive disturbances are due directly to functional or more serious derangements of the pneumogastric and vasomotor systems, whether cerebro-spinal meningitis, for instance, is simply a malignant form of influenza, is a fair subject for speculation; but that there is a class of cases in which the primary and secondary effects of the poison are felt by the nervous system, as manifested by pain and sensitiveness in various parts, by headache, and by disturbances of cerebration, there can be no doubt.

Dr. Charles K. Mills, of Philadelphia, has brought up the subject in a recent paper before the Philadelphia County Medical Society.¹ He bases his consideration of it upon the broad ground, that all diseases of infectious or toxic origin — epidemic, endemic, sporadic or accidental — may strike any or all parts of the nervous system with a result which will be proportionate: first, to the virulence of the infecting agent; and, second, to the resistance of the individual, whether this is due to constitutional predisposition or to the result of previous injury or disease. The microbes may differ, but a bond of union and close resemblance can be recognized between the effects on the nervous system of all contagious and infectious diseases.

In all these affections at the time of acute onset, if the illness is of a serious character, such symptoms are present as great mental and nervous debility, irritability, restlessness, sleeplessness, or the opposite states of torpor, stupor, hebetude, or coma; delirium; vertigo or syncope; headache, browache, napeache, backache and limbache; pains of all degrees of severity referred to various nerve areas; hyperesthesia of the skin, of muscle-masses, or confined to nerve-trunks or branches; spasms, local or general, and with or without

¹ January 13, 1892.

out unconsciousness; sometimes mental disturbance amounting to true mania or melancholia. During the progress of such affections any one or several of these enumerated symptoms may be present. Supra-orbital pain, for example, may be the only prominent nervous symptom in a case of influenza; headache and back-ache in diphtheria; hyperesthesia in mumps, diabetes, or gout; and mania in a case of puerperal infection. Any infectious or toxic disease may, in brief, produce the same symptom, syndrome, or train of phenomena; and — which is the main point — for the same reason, namely, because of the introduction into the system of an agent which directly and powerfully poisons nervous centres, and possibly also nervous conducting tissues.

Following all infectious, diathetic, or toxic diseases, moreover, or directly springing from them, common experience teaches that we may have great nervous or general weakness; forms of insanity of the depressive type; paresis and paralysis of every grade from an affection of a single muscle to that of all the extremities, and even more; localized spasm or cramp; general convulsions; pains in the nerves, muscles, and joints; and losses or perversions of sensation.

These symptoms and conditions, which may occur at the onset, during or after the subsidence of any infectious or toxic disease, are those which constitute the nervous features of the prevailing epidemic.

Dr. Mills then asks: How is the nervous system affected by influenza? What are its primary or direct effects on the nervous system, and what are some of the more persistent and permanent impairments, and how are these determined by the disease? What are its acute nervous and mental phenomena, and what are the most common sequences? What is the probable pathology of these states, and what treatment is best in view of the neurotic characteristics of the affection?

Acknowledging the great difficulties attending any attempt to classify the nervous and mental phenomena of influenza, he recognizes, firstly, symptoms and conditions which, although manifested in non-nervous organs, are directly traceable to a nervous origin; secondly, affections which would be recognized by all as properly referred to the nervous system; and thirdly, affections occurring in nervous tissues and organs, although, strictly speaking, not nervous diseases.

Without stopping to discuss the possible nervous origin of the fever of influenza, or to explain the catarrh, indigestion, etc., on some neurotic theory, as leading him too far from his immediate subject, the author emphasizes the fact that some of the most prominent pulmonary, cardiac, and vascular affections of influenza can best be explained on neural theories, and inclines to the conclusion, which has been previously advocated by Graves and others, that the pneumonias of influenza are often due to vasomotor paralysis, that they are, in fact, forms of blood stasis or passive congestion from vasomotor paralysis, which in its turn is dependent upon the action of the infection upon the pneumogastric centres and the nervous sys-

tem in general. Many disorders in various parts of the body are, he thinks, best explained on this theory of local vasomotor paralysis.

The peculiar forms of pulse, and the uncertain or perverted action of the heart, extending in some cases to cardiac palsy and death, are in a strict sense nervous phenomena due to paralysis, partial or complete, of the inhibitory apparatus of the heart.

Of those symptoms and affections which would clearly be recognized as belonging to the nervous system, great nervous and mental prostration, both as an acute manifestation and as a persisting sequel, has engaged the attention and required the treatment of all practitioners. The mental depression often present as an initial symptom has been, in some cases, simply overpowering. Some of the patients are affected like individuals whose mental and motor centres have been poisoned to the limits of human endurance, while still permitting the retention of consciousness. In other cases even consciousness itself has been overwhelmed.

Dr. Mills finds that not a few patients who suffered from attacks of influenza during the early period of the present epidemic are still victims of profound neurasthenia, and this in cases which are not distinctively of the melancholic type. These neurasthenics are unable to endure a fair amount of work; their nervous forces are soon routed; they are weak, worrisome and uncuperative. The cardiac weakness which has been left is undoubtedly, he thinks, in part the cause of this neurasthenia.

Among organic nervous diseases which have developed during the influenza or have been left in its wake, are in the order of their frequency, so far as Dr. Mills's personal observation has gone, neuritis, meningitis, myelitis and cerebritis, or various combinations of these inflammatory affections, as, for example, concurrent neuritis and myelitis, meningo-myelitis, or meningo-encephalitis.

He thinks that probably no single affection of the nervous system has been so common during and after influenza and particularly as a sequel of the disorder, as neuritis. Almost every variety of neuritis as regards location and diffusion has been recorded. Multiple neuritis, while not common, has not been rare. Isolated neuritis of almost every cranial nerve has been recorded, with such resulting conditions as optic atrophy, loss of smell and of taste, ophthalmoplegias, both internal and external; oculo-motor, facial, and bulbar or pseudo-bulbar palsies of various types, including true pneumogastric paralysis. Of the forms of local neuritis most common the supra-orbital, intercostal, sciatic and plantar might be mentioned.

The articular pain and other so-called rheumatic manifestations so numerous during and after attacks of influenza are after all best explained on the theory of infectious neuritis or myositis.

Those cases with articular and other pains, and with swelling, recall, in some respects, the endemic or epidemic form of multiple neuritis known as beri-beri.

The neuralgias and neuritis should be distinguished.

Practically those cases should be regarded as neuralgic, in which pain is referred to certain nerve lines or radiations; but in which pain on pressure, and the other phenomena of neuritis, such as anesthesia, vasomotor, and trophic disorders and even paralysis, are absent.

Of diseases of the spinal cord proper, occurring as complications or consequences of influenza, the reported cases are important but not numerous. A few cases of myelitis have been put on record by native and foreign observers — one is cited by Dr. Mills in which all four extremities were paralyzed.

That meningitis, either cerebral, spinal or cerebro-spinal, occurs during the decline of the influenza, cannot be doubted in the light of the evidence which has been presented by various observers, and particularly during the epidemic of the last three years. It is, however, according to the writer, a comparatively rare concomitant or complication.

The reports of cases terminating fatally because of meningitis, must be received cautiously and sometimes incredulously. The form of meningitis most likely to be present in influenza is inflammation of the pia-arachnoid or soft membranes, now often designated lepto-meningitis. This affection *may* exist without pain. A genuine meningitis, sometimes of malignant type, may appear, however, during the progress or closely following influenza.

With reference to the relation between influenza and the psychoses, Dr. Mills quotes and endorses the following conclusions reached by Dr. Leledy:

- (1) Influenza, like other febrile affections, may establish a psychopathy.
- (2) Insanity may develop at various periods of the attack.
- (3) Influenza may induce any form of insanity.
- (4) No specific symptoms are manifested.
- (5) The rôle of influenza in the causation of insanity is a variable one.
- (6) Influenza may be a predisposing or exciting cause.
- (7) In all cases there is some acquired or inherited predisposition.
- (8) The insanity is the result of altered brain nutrition, possibly toxic.
- (9) The onset of the insanity is often sudden, and bears no relation to the severity of the attack of influenza.
- (10) The curability depends on general rather than on special conditions.
- (11) The insane are less disposed to influenza than are the sane.
- (12) In rare instances influenza has cured psychoses.
- (13) The insane may have mental remission during the influenza.
- (14) There is no special indication in treatment.
- (15) Influenza may lead to crimes and to medicico-legal issues.

A delusional melancholia is the most frequent type, and this sometimes assumes the form of melancholia agitata.

In each year in Cook County, Illinois, the epidemic of influenza has been attended by an increase in the number of proceedings for the commitment of the insane, which Church believes cannot be explained by increase or movement of the population of the county.

The use in influenza of hypnotics, narcotics, sedatives and motor depressants, Dr. Mills regards as a question of particular interest in connection with the study of the nervous and mental phenomena of the disorder, and expresses a belief, with which we heartily agree, that the truth resides between the two extreme opinions — the one which vaunts such agents

as panaceas against all manifestations of the disease, and the other, which considers any or all of these remedies — phenacetin for instance — as absurd and irrational in all cases.

In conclusion Dr. Mills says: The epidemic influenza has impaired the *morale* of the community. Lack of spirit in work, and an apprehensiveness with reference to health, business, and all matters of personal interest are abnormally prevalent. The hysterical have become more hysterical; the neurosthenic more neurosthenic. Hypochondria has displaced hopefulness in individuals commonly possessed of courage and fortitude. In brief, certain neuropathic and psychopathic features have been impressed upon the community. We cannot afford even to dismiss entirely from consideration the bearings of the epidemic upon the increase not only of suicides, but of other grave crimes.

RESTRICTING THE DISTRIBUTION OF SCARLET FEVER.

EARLIER in the winter the town of Brookline suffered from an epidemic of scarlet fever, which was especially active among the school children. The Board of Health, in consultation with some of the prominent practitioners of the town, took the matter in hand, and, exercising the authority delegated to it by the Public Statutes of the State as interpreted by the State Board of Health, issued a circular of advice, with some orders appended which, in connection with the usual tendency of an epidemic to eventually wear itself out by exhausting the fresh supply of susceptible material, has been followed by good results.

The period of incubation is accepted by the circular as varying from several hours to three, or possibly four, weeks. The time at which children, from a house where there has been a case of this disease, may attend school or mingle with other children, is fixed by this Board of Health, in common with others in this State, at six weeks from the commencement of the last case in the house; and no child that has visited a house in which there was at the time a case of scarlet fever, shall attend school until the expiration of two weeks following exposure. Every house infected with scarlet fever shall be placarded by a card furnished by the Board. Infected rooms and articles shall be disinfected by the Board, or by the family to the satisfaction of the Board. Another order provides against public funerals.

The circular is a good one, both in its suggestions and in its orders, but it also illustrates the difficulty of dealing with the subject satisfactorily. The *summum bonum* cannot be enforced, and an approximation to the next best thing must be aimed at. In the matter of disinfection it is recommended that sulphur be used, but its application is to be preceded by scrubbing with a disinfectant and followed by the admission of fresh air and sunshine, measures which probably insure the efficiency of the sulphur fumes.

The period of six weeks from the commencement

of the attack is probably as good an arbitrary period as any, if one must be fixed, for raising the quarantine of the individual. But the decision as to the moment when desquamation has ceased to be a source of danger, can really only be made with accuracy in each case separately, and even then it is sometimes sufficiently perplexing, as those having hospital experience with the disease well know. The difficulties of enforcing everything, are no excuse, however, for not undertaking to do something, and the local Boards of Health deserve the cordial support of their communities in these efforts.

THE BACILLUS OF INFLUENZA.

It was announced on January 7th at Koch's Institute for Infectious Diseases at Berlin, that the micro-organism of influenza had been successfully proved and cultivated. Dr. Richard Pfeiffer, chief of the scientific section, had succeeded in demonstrating a bacillus which is found only in cases of influenza, and in making a pure culture from which the disease can be induced in apes and rabbits. The same bacillus had been seen and photographed by him two years ago, but its significance could not then be proved. The reasons that this micro-organism has so long escaped detection are its small size and the difficulty in staining and in making a pure culture of it. In the cases of influenza under observation this tiny bacillus was found in immense quantities in the bronchial secretion, in uncomplicated cases in pure culture; their number keeping equal pace with the course of the disease. The bacilli appear as small rods, about half the length of the bacillus of mouse septicæmia.

Dr. Pfeiffer had only succeeded in cultivating the germ to the second generation, but Kitasato has been able to reach the fifth generation on glycerine agar. The colonies are so small that they may easily be overlooked, and possess the peculiarity of remaining separate from each other, instead of running together as is the case with the colonies of other bacteria. The bacilli themselves are immovable.

The same bacillus was discovered independently by Dr. Canon at the Moabit Hospital, and reported at the same time. Instead of searching the bronchial secretion, the blood of patients with influenza was examined. He feels justified in asserting that the micro-organism is always found in the blood of patients with influenza, at least during the stage of fever, and that it is not found in the blood of other persons.

The only suggestion for prevention or treatment of the disease based upon the discovery of this bacillus is that the sputum of patients should be carefully disinfected.

MEDICAL NOTES.

THE MEDICAL FORTNIGHTLY is the title of a new bi-monthly magazine which appeared for the first time on January 1st. It is edited by Dr. Bransford Lewis and is published in St. Louis.

NEW ENGLAND.

BOSTON LYING-IN HOSPITAL. — During the past year 527 patients were cared for in the hospital. In the out-patient department, the number of patients was 735.

DEATH-RATE IN BOSTON. — During the past week twenty-five deaths were reported as due to influenza, but all except three were complicated with some other disease. The death-rate appears to be steadily diminishing. The total number of deaths was 258, a death-rate of 29.2. The deaths from consumption were 34, pneumonia, 55, bronchitis, 24. The number of persons over sixty years of age was 48.

BEQUESTS TO PUBLIC INSTITUTIONS. — By the will of Anne W. Davis the sum of \$15,000 is given in trust, after the expiration of a life interest, two thirds of the income to be paid to the Massachusetts General Hospital and one-third to the New England Hospital for Women and Children. The will of Mrs. Elizabeth B. Bowditch contains the following bequests: The Massachusetts General Hospital, \$5,000; to establish or support a home for convalescents, \$5,000; House of the Good Samaritan, \$5,000; Children's Hospital, \$3,000; Old Ladies' Home, \$3,000.

NEW YORK.

MORTALITY FOR THE WEEK. — During the week ending January 16th, the number of deaths reported in the city was 907, which is 25 less than the preceding week, and represents an annual death-rate of 27.70 per thousand of the estimated population. The deaths from influenza and complications were 20 less than in the week preceding, being 69 in number.

SMALL-POX. — Some eight or ten cases of small-pox have recently been discovered among the Italian residents of the city, and the disease appears to have been brought from Newark, N. J., where it is said to have gained considerable headway. All the patients found were transferred to the hospital for contagious diseases on North Brothers Island, but three cases are known to have been secreted by their friends, and on the night of January 22d, a party of sanitary inspectors and policemen, headed by Dr. Cyrus Edson, Chief of the Bureau of Contagious Diseases, made an unsuccessful hunt for them among the slums.

Miscellany.

BERI-BERI.

On account of occasional report of cases of beri-beri among the fisherman on the banks off the coast of Newfoundland, the following description of the disease, as observed by Mr. A. W. Sinclair, a residency surgeon on the Malay Peninsula may prove interesting. He believes that the term beri-beri was derived from the Sanscrit "bhara," a weight, the repetition being used simply to intensify the meaning of the word. Every patient affected with the disease describes the principal symptom as a weight in his chest, legs, or

¹ Lancet, December 26th.

arms, as the case may be. Beri-beri appears in the Malay Peninsula both in the endemic and epidemic form. It principally attacks the Chinese coolies working in the tin mines, but it affects other nationalities also, and men, women and children.

In considering the etiology of the disease, the author advertises to poor living, bad clothing, poor accommodation, and exposure as among the principal causes of the disease. It seems that, in many cases at any rate, beri-beri is preceded by repeated attacks of fever, ending in swelling of the abdomen and legs. The disease commences with a feeling of malaise, followed by weakness and rheumatic pains in the joints, and a dull continuous pain in the stomach and in the knees, passing down into the feet, attended by a feeling of numbness and swelling of the parts, with oedema. Occasionally there is atrophy of the muscles of the legs, with loss of power, without any swelling, and in those cases the arms are often similarly affected. The pulse is generally soft and compressible. There is a thrill over the region of the heart, and hemic murmurs and strong pulsations in the sternal notch are present. Knee and elbow jerks are usually absent. The peculiar gait is well marked, the foot being thrown forward with a jerk and raised considerably, the toes coming to the ground first. There is generally an inclination to fall on closing the eyes and bringing the feet together. As a rule, there is no loss of sensation; sometimes there may be aphasia. There is a feeling of suffocation on laying down. The patient may die soon after the attack, or linger on for five or six months — rarely longer; he commonly dies suddenly and in much pain, described as of a burning character, in the chest and abdomen.

The post-mortem appearances are mainly indicative of congestion and enlargement of the internal organs, with dropical effusions, especially in the pericardium and oedema of the lungs. In the post-mortem examination of 100 Chinese dying of the disease the anchylostoma duodenale was discovered in the intestines in eighty instances, and distoma crassum in one. The blood of 100 typical cases of beri-beri was examined without the discovery of any micro-organism. The blood discs were found to be pale and few in number. Mr. Sinclair mentions that he inadvertently inoculated himself on one occasion, with the result that some symptoms resembling those of an early stage of beri-beri followed, but they passed away in about a week. He considers beri-beri a contagious disease induced by some micro-organism. Albumen was not present in the urine, which was in a number of cases strongly acid. Malarial cachexia was evident in all the cases. Anthelmintics were useful where internal parasites were suspected, and tonics of iron and strychnia were beneficially employed.

THERAPEUTIC NOTES.

TREATMENT OF GOITRE BY PARENCHYMATOUS INJECTIONS OF IODOFORM. — Moesig Von Moorhof treats goitre by hypodermic injections of one syringe-full of the following solution:

R. Iodoform	1 part.
Ether	as 7 parts.
Olive oil }	M.

The trocar of the syringe previously disinfected is plunged to a depth of two to three centimetres and

the injection is thrown into the parenchyma of the thyroid body. The injections are repeated at intervals of from four to six days. When the gland is very large, two or three syringefuls of the medicinal solution are injected at different parts of the tumor, the venous trunks being avoided. The local reaction is very feeble. Kapper¹ has treated fourteen patients by these injections, with marked diminution, in every instance of the volume of the thyroid after from two to four months of treatment.

ZINC GLUE FOR STIFF SURGICAL DRESSINGS.² — Treutler recommends a preparation, first suggested by Unna, for obtaining stiff surgical dressings, such as are applied to fractured or dislocated limbs. It is as follows:

R. Oxide of zinc	10 parts
Gelatin	20 "
Glycerin	30 "
Water	30 " M.

This is thickly applied and rubbed into the muslin or gauze forming the bandage. A thinner preparation contains twenty parts of gelatin and forty parts of water, the other ingredients remaining the same.

Correspondence.

THE TREATMENT OF CHRONIC SPRAINS OF THE FINGER-JOINTS.

BOSTON, January 22, 1892.

MR EDITOR: — By the JOURNAL of the 21st instant I am pleased to learn that Dr. Lovett has met with considerable success in the treatment of chronic sprains of the finger-joints. Many such cases have been sent to me for massage by physicians; and I am sorry to say that I have had but little success; indeed, I fear that I have even made some of them worse by over-zealous attempts at passive motion. It is rather puzzling why chronic sprains of the finger-joints should prove more intractable to treatment than chronic sprains of some other joints. They have no weight to carry, as do the joints of the lower extremities, chronic as well as acute sprains of which generally do well under treatment by massage. The less the objective symptoms about a joint the harder it is to relieve pain, which in some cases is probably due to neuritis.

The subject of Dr. Lovett's paper is not one of recent acute sprains, still it may be allowable to speak of them here. Even severe cases of this class do remarkably well under immobilization and massage from the very first, once or twice daily, removing the fixed dressing for this purpose. Under this combined method of treatment there is generally free use of the joint in seven or eight days. The orthodox treatment of absolute immobility alone in these cases has little else to support it than the dogmatism of centuries, from which it is almost impossible for a surgeon to free himself unless he has been the unfortunate victim of a sprain and had it treated with massage, and immobilization if necessary. Supposing that any one wanted to make a well joint stiff, to what more effectual means could he resort than first to give it a wrench or sprain, then do it up in a fixed dressing, so that the resulting inflammation would have an opportunity to produce adhesion of the tissues? The same plan of treatment is employed for the purpose of closing up a hole, namely, that of exciting adhesive inflammation, and unfortunately it sometimes closes the cavity of a joint also. Massage in recent sprains speedily removes the heat, the pain, the swelling, and prevents the formation of adhesions. The mode of applying it I have frequently described.

Very truly yours,

DOUGLAS GRAHAM, M.D.

¹ Deut. Med. Woch.

² Therapeutic Gazette, December.

METEREOLOGICAL RECORD

For the week ending January 9, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Baro- meter	Thermom- eter.	Relative humidity.	Direction of wind.	Velocity of wind.	Weath'- er.
Date.					
	Daily mean.	Daily mean.			
S.	3. 29.25	10.45	80 A. M.	8.00 A. M.	8.00 A. M.
M.	29.26	36.31	80	80	80
A.	29.23	36.31	58	58	58
M.	29.23	36.31	57	57	57
J.	29.23	36.31	55	55	55
J.	29.23	36.31	54	54	54
S.	29.23	36.31	53	53	53
F.	29.23	36.31	52	52	52
E.	29.23	36.31	51	51	51
M.	29.23	36.31	50	50	50
J.	29.23	36.31	49	49	49
J.	29.23	36.31	48	48	48
S.	29.23	36.31	47	47	47
F.	29.23	36.31	46	46	46
E.	29.23	36.31	45	45	45
M.	29.23	36.31	44	44	44
J.	29.23	36.31	43	43	43
J.	29.23	36.31	42	42	42
S.	29.23	36.31	41	41	41
F.	29.23	36.31	40	40	40
E.	29.23	36.31	39	39	39
M.	29.23	36.31	38	38	38
J.	29.23	36.31	37	37	37
J.	29.23	36.31	36	36	36
S.	29.23	36.31	35	35	35
F.	29.23	36.31	34	34	34
E.	29.23	36.31	33	33	33
M.	29.23	36.31	32	32	32
J.	29.23	36.31	31	31	31
J.	29.23	36.31	30	30	30
S.	29.23	36.31	29	29	29
F.	29.23	36.31	28	28	28
E.	29.23	36.31	27	27	27
M.	29.23	36.31	26	26	26
J.	29.23	36.31	25	25	25
J.	29.23	36.31	24	24	24
S.	29.23	36.31	23	23	23
F.	29.23	36.31	22	22	22
E.	29.23	36.31	21	21	21
M.	29.23	36.31	20	20	20
J.	29.23	36.31	19	19	19
J.	29.23	36.31	18	18	18
S.	29.23	36.31	17	17	17
F.	29.23	36.31	16	16	16
E.	29.23	36.31	15	15	15
M.	29.23	36.31	14	14	14
J.	29.23	36.31	13	13	13
J.	29.23	36.31	12	12	12
S.	29.23	36.31	11	11	11
F.	29.23	36.31	10	10	10
E.	29.23	36.31	9	9	9
M.	29.23	36.31	8	8	8
J.	29.23	36.31	7	7	7
J.	29.23	36.31	6	6	6
S.	29.23	36.31	5	5	5
F.	29.23	36.31	4	4	4
E.	29.23	36.31	3	3	3
M.	29.23	36.31	2	2	2
J.	29.23	36.31	1	1	1
J.	29.23	36.31	0	0	0
S.	29.23	36.31	-1	-1	-1
F.	29.23	36.31	-2	-2	-2
E.	29.23	36.31	-3	-3	-3
M.	29.23	36.31	-4	-4	-4
J.	29.23	36.31	-5	-5	-5
J.	29.23	36.31	-6	-6	-6
S.	29.23	36.31	-7	-7	-7
F.	29.23	36.31	-8	-8	-8
E.	29.23	36.31	-9	-9	-9
M.	29.23	36.31	-10	-10	-10
J.	29.23	36.31	-11	-11	-11
J.	29.23	36.31	-12	-12	-12
S.	29.23	36.31	-13	-13	-13
F.	29.23	36.31	-14	-14	-14
E.	29.23	36.31	-15	-15	-15
M.	29.23	36.31	-16	-16	-16
J.	29.23	36.31	-17	-17	-17
J.	29.23	36.31	-18	-18	-18
S.	29.23	36.31	-19	-19	-19
F.	29.23	36.31	-20	-20	-20
E.	29.23	36.31	-21	-21	-21
M.	29.23	36.31	-22	-22	-22
J.	29.23	36.31	-23	-23	-23
J.	29.23	36.31	-24	-24	-24
S.	29.23	36.31	-25	-25	-25
F.	29.23	36.31	-26	-26	-26
E.	29.23	36.31	-27	-27	-27
M.	29.23	36.31	-28	-28	-28
J.	29.23	36.31	-29	-29	-29
J.	29.23	36.31	-30	-30	-30
S.	29.23	36.31	-31	-31	-31
F.	29.23	36.31	-32	-32	-32
E.	29.23	36.31	-33	-33	-33
M.	29.23	36.31	-34	-34	-34
J.	29.23	36.31	-35	-35	-35
J.	29.23	36.31	-36	-36	-36
S.	29.23	36.31	-37	-37	-37
F.	29.23	36.31	-38	-38	-38
E.	29.23	36.31	-39	-39	-39
M.	29.23	36.31	-40	-40	-40
J.	29.23	36.31	-41	-41	-41
J.	29.23	36.31	-42	-42	-42
S.	29.23	36.31	-43	-43	-43
F.	29.23	36.31	-44	-44	-44
E.	29.23	36.31	-45	-45	-45
M.	29.23	36.31	-46	-46	-46
J.	29.23	36.31	-47	-47	-47
J.	29.23	36.31	-48	-48	-48
S.	29.23	36.31	-49	-49	-49
F.	29.23	36.31	-50	-50	-50
E.	29.23	36.31	-51	-51	-51
M.	29.23	36.31	-52	-52	-52
J.	29.23	36.31	-53	-53	-53
J.	29.23	36.31	-54	-54	-54
S.	29.23	36.31	-55	-55	-55
F.	29.23	36.31	-56	-56	-56
E.	29.23	36.31	-57	-57	-57
M.	29.23	36.31	-58	-58	-58
J.	29.23	36.31	-59	-59	-59
J.	29.23	36.31	-60	-60	-60
S.	29.23	36.31	-61	-61	-61
F.	29.23	36.31	-62	-62	-62
E.	29.23	36.31	-63	-63	-63
M.	29.23	36.31	-64	-64	-64
J.	29.23	36.31	-65	-65	-65
J.	29.23	36.31	-66	-66	-66
S.	29.23	36.31	-67	-67	-67
F.	29.23	36.31	-68	-68	-68
E.	29.23	36.31	-69	-69	-69
M.	29.23	36.31	-70	-70	-70
J.	29.23	36.31	-71	-71	-71
J.	29.23	36.31	-72	-72	-72
S.	29.23	36.31	-73	-73	-73
F.	29.23	36.31	-74	-74	-74
E.	29.23	36.31	-75	-75	-75
M.	29.23	36.31	-76	-76	-76
J.	29.23	36.31	-77	-77	-77
J.	29.23	36.31	-78	-78	-78
S.	29.23	36.31	-79	-79	-79
F.	29.23	36.31	-80	-80	-80
E.	29.23	36.31	-81	-81	-81
M.	29.23	36.31	-82	-82	-82
J.	29.23	36.31	-83	-83	-83
J.	29.23	36.31	-84	-84	-84
S.	29.23	36.31	-85	-85	-85
F.	29.23	36.31	-86	-86	-86
E.	29.23	36.31	-87	-87	-87
M.	29.23	36.31	-88	-88	-88
J.	29.23	36.31	-89	-89	-89
J.	29.23	36.31	-90	-90	-90
S.	29.23	36.31	-91	-91	-91
F.	29.23	36.31	-92	-92	-92
E.	29.23	36.31	-93	-93	-93
M.	29.23	36.31	-94	-94	-94
J.	29.23	36.31	-95	-95	-95
J.	29.23	36.31	-96	-96	-96
S.	29.23	36.31	-97	-97	-97
F.	29.23	36.31	-98	-98	-98
E.	29.23	36.31	-99	-99	-99
M.	29.23	36.31	-100	-100	-100
J.	29.23	36.31	-101	-101	-101
J.	29.23	36.31	-102	-102	-102
S.	29.23	36.31	-103	-103	-103
F.	29.23	36.31	-104	-104	-104
E.	29.23	36.31	-105	-105	-105
M.	29.23	36.31	-106	-106	-106
J.	29.23	36.31	-107	-107	-107
J.	29.23	36.31	-108	-108	-108
S.	29.23	36.31	-109	-109	-109
F.	29.23	36.31	-110	-110	-110
E.	29.23	36.31	-111	-111	-111
M.	29.23	36.31	-112	-112	-112
J.	29.23	36.31	-113	-113	-113
J.	29.23	36.31	-114	-114	-114
S.	29.23	36.31	-115	-115	-115
F.	29.23	36.31	-116	-116	-116
E.	29.23	36.31	-117	-117	-117
M.	29.23	36.31	-118	-118	-118
J.	29.23	36.31	-119	-119	-119
J.	29.23	36.31	-120	-120	-120
S.	29.23	36.31	-121	-121	-121
F.	29.23	36.31	-122	-122	-122
E.	29.23	36.31	-123	-123	-123
M.	29.23	36.31	-124	-124	-124
J.	29.23	36.31	-125	-125	-125
J.	29.23	36.31	-126	-126	-126
S.	29.23	36.31	-127	-127	-127
F.	29.23	36.31	-128	-128	-128
E.	29.23	36.31	-129	-129	-129
M.	29.23	36.31	-130	-130	-130
J.	29.23	36.31	-131	-131	-131
J.	29.23	36.31	-132	-132	-132
S.	29.23	36.31	-133	-133	-133
F.	29.23	36.31	-134	-134	-134
E.	29.23	36.31	-135	-135	-135
M.	29.23	36.31	-136	-136	-136
J.	29.23	36.31	-137	-137	-137
J.	29.23	36.31	-138	-138	-138
S.	29.23	36.31	-139	-139	-139
F.	29.23	36.31	-140	-140	-140
E.	29.23	36.31	-141	-141	-141
M.	29.23	36.31	-142	-142	-142
J.	29.23	36.31	-143	-143	-143
J.	29.23	36.31	-144	-144	-144
S.	29.23	36.31	-145	-145	-145
F.	29.23	36.31	-146	-146	-146
E.	29.23	36.31	-147	-147	-147
M.	29.23	36.31	-148	-148	-148
J.	29.23	36.31	-149	-149	-149
J.	29.23	36.31	-150	-150	-150
S.	29.23	36.31	-151	-151	-151
F.	29.23	36.31	-152	-152	-152
E.	29.23	36.31	-153	-153	-153
M.	29.23	36.31	-154	-154	-154
J.	29.23	36.31	-155	-155	-155
J.	29.23	36.31	-156	-156	-156
S.	29.23	36.31	-157	-157	-157
F.	29.23	36.31	-158	-158	-158
E.	29.23	36.31	-159	-159	-159
M.	29.23	36.31	-160	-160	-160
J.	29.23	36.31	-161	-161	-161
J.	29.23	36.31	-162	-162	-162
S.	29.23	36.31	-163	-163	-163
F.	29.23	36.31	-164	-164	-164
E.	29.23	36.31	-165	-165	-165
M.	29.23	36.31	-166	-166	-166
J.	29.23	36.31	-167	-167	-167
J.	29.23	36.31	-168	-168	-168
S.	29.23	36.31	-169	-169	-169
F.	29.23	36.31	-170	-170	-170
E.	29.23	36.31	-171	-171	-171
M.	29.23	36.31	-172	-172	-172
J.	29.23	36.31	-173	-173	-173
J.	29.23	36.31	-174	-174	-174
S.	29.23	36.31	-175	-175	-175
F.	29.23	36.31</td			

* O, cloudy; C, clear; F, fair; G, fog; H, hazy S, smoky; R, rain; T, threatening; N, snow. † Indicates trace of rainfall. **ME** Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 9, 1892

	Estimated population for 1930.	Reported deaths in each city.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases	Acute lung diseases	Scarlet fever	Typhoid fever.	Unspecified acute diseases
New York	1,515,301	972	330	14.1	22.61	.35	.31	5.1
Chicago	1,069,850	617	231	12.12	18.48	2.08	14.39	5.1
Philadelphia	1,046,963	653	230	11.30	11.40	2.25	2.25	5.1
Brooklyn	808,943	494	169	12.20	26.90	2.60	3.40	6.8
Baltimore	517,173	347	120	11.40	21.40	—	—	2.3
Boston	449,477	339	76	5.64	34.52	2.06	—	—
Baltimore	434,439	296	172	46	12.76	21.46	1.16	1.16
Cincinnati	296,908	172	172	46	20.52	27.30	1.05	—
Cleveland	292,000	95	35	36.02	27.30	—	—	—
Newark	291,800	95	35	36.02	27.30	—	—	—
Pittsburg	240,680	88	33	22.80	20.52	4.56	5.70	7.1
Milwaukee	240,100	169	52	32.20	12.58	8.28	3.82	21.1
Washington	230,302	132	43	31.40	31.92	—	—	—
Nashville	76,168	40	17	5.00	27.50	—	—	—
Utica	59,381	39	17	44.80	23.08	—	—	—
Portland	58,423	17	7	5.88	47.04	—	—	—
Worcester	64,625	64	18	9.36	29.64	—	—	—
Lowell	77,696	64	20	13.04	23.40	1.56	6.24	—
Fall River	74,398	37	11	32.40	—	—	—	—
Cambridge	70,628	52	13	3.78	26.92	—	—	3.7
Lynn	67,296	29	10	3.46	56.82	—	—	—
Lawrence	44,654	33	11	9.09	15.15	—	—	3.0
New Bedford	44,179	25	5	17.85	42.84	3.55	3.57	7.0
Boston	40,733	34	9	—	13.33	—	—	—
Chelsea	30,801	24	9	—	30.45	—	—	—
Quincy	25,900	16	4	—	40.00	—	—	—
Haverhill	25,412	26	4	3.85	15.40	—	—	—
Fauntleroy	25,445	11	6	9.09	36.36	—	—	9.0
Gloucester	24,651	16	6	—	18.75	—	—	—
Newton	24,379	16	6	—	22.50	—	—	—
Marlboro	23,410	14	3	—	21.42	—	—	—
Fitchburg	22,037	14	3	—	—	—	—	—
Waltham	18,707	11	3	—	18.18	9.09	—	—
Pittsfield	17,281	9	1	—	—	—	—	—
Quincy	16,723	10	3	—	20.00	10.00	—	20.0
Newburyport	15,200	11	3	—	—	—	—	—
Medford	11,079	5	1	—	—	—	—	—
Clinton	10,424	5	1	—	—	—	—	—
Hyde Park	10,193	2	0	50.00	50.00	—	—	—
Penobury	10,155	4	0	—	50.00	—	—	50.0

Deaths reported 4,284: under five years of age 1,315; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, coryzaes and fevers) 615, acute lung diseases 1,052, consumption 417, diphtheria and croup 263, typhoid fever 117, scarlet fever 101, diarrhoeal diseases 53, measles 24, whooping-cough 22, cerebro-spinal meningitis 17, coryzaes 14, malarial fever 4.

From diarrhoeal diseases Cincinnati 17, New York 15, Philadelphia 5, Brooklyn 4, Indianapolis, Washington, Lowell and Lawrence 2 each, Milwaukee, Charleston, Haverhill and Hyde Park 1 each. From measles New York 16, Brooklyn 4, Chicago, Boston, Cincinnati and Milwaukee 1 each. From whooping-cough New York 8, Chicago 3, Brooklyn, Boston, Cleveland and Washington 2 each, Pittsburgh, Portland and New Bedford 1 each. From cerebro-spinal meningitis Chicago 7, New York

and Washington 3 each, Lynn 2, Brooklyn and Lowell 1 each. From erysipelas New York 5, Chicago 4, Brooklyn, Boston, Washington, Nashville and Lowell 1 each. From malarial fever Brooklyn 2, New York and Philadelphia 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 10,010,426, for the week ending December 26th, the death-rate was 22.8. Deaths reported 4,106; acute diseases of the respiratory organs (London) 553, measles 170, whooping-cough 167, scarlet fever 39, diphtheria 34, fever 26, diarrhoea 25.

The death-rates ranged from 13.2 in Leicester to 45.1 in Newcastle-on-Tyne; Birmingham 16.5, Cardiff 22.4, Hull 16.9, Leeds 24.2, Liverpool 28.1, London 23.0, Manchester 23.7.

In Edinburgh 25.5. Glasgow 27.1.
In the twenty-eight greater towns of England and Wales with
an estimated population of 9,495,100, *for each town*, *in 1931*

An estimated population of 9,405,108, for the week ending January 2d, the death-rate was 33.4. Deaths reported 5,672: acute diseases of the respiratory organs (London) 1,317, whooping cough 273, measles 224, diarrhoea 52, diphtheria 48, influenza (London) 37, scarlet fever 36, fever 34.

The death-rates ranged from 19.4 in Halifax to 45.3 in Wolverhampton; Birmingham 29.1, Bradford 32.0, Hull 26.7, Leeds 35.5, Leicester 20.5, Liverpool 42.2, London 42.0, Manchester 33.6, Newcastle-on-Tyne 37.0, Nottingham 26.2, Sheffield 26.3, Sunderland 23.0.

In Edinburgh 22.9, Glasgow 29.4, Dublin 45.8

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 16, 1892.

Cities.	Estimated population for 1930.	Recovered deaths in each.	Deaths under five years.	Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Pneumonia and group A.
New York	1,515,301	967	329	14.85	22.33	4.51	.44	5.52
Chicago	1,059,850	600	244	23.07	22.74	7.82	11.45	4.82
Philadelphia	906,343	465	152	14.08	27.50	2.64	.89	5.75
Brooklyn	451,770	286	66	70.00	37.10	1.75	—	3.57
St. Louis	148,477	286	66	70.00	37.10	1.75	—	3.57
Boston	454,842	306	84	18.36	14.28	2.04	4.08	9.21
Baltimore	308,968	146	44	17.22	22.14	—	—	—
Cincinnati	282,000	123	42	17.22	22.14	—	—	—
Cleveland	242,030	—	—	—	—	—	—	—
New Orleans	240,000	119	51	21.00	20.16	2.52	5.04	10.67
Pittsburg	239,000	162	46	42.40	13.72	3.59	5.92	16.87
Milwaukee	240,000	150	54	25.00	8.00	—	—	—
Providence	220,000	56	22	38.56	6.26	—	3.13	6.57
Nashville	76,168	32	8	15.65	6.25	—	—	—
Charleston	55,165	44	9	4.54	6.81	—	4.54	6.57
Portland	36,425	27	4	37.00	25.20	—	—	—
Worcester	81,655	52	15	4.64	6.46	—	—	—
Albany	74,286	26	10	10.56	25.08	1.52	3.96	7.41
Fall River	74,286	59	12	4.09	36.00	—	—	—
Cambridge	50,026	33	9	15.15	21.21	3.63	3.03	6.31
Lynn	55,727	39	11	26.56	38.54	—	—	—
Lawrence	44,654	24	11	8.82	26.46	—	2.64	—
Salem	50,145	19	5	3.03	30.20	—	3.03	3.81
New Bedford	40,733	22	5	—	—	—	—	—
Salem	30,861	33	5	—	15.65	—	—	—
Chelsea	27,969	24	1	12.48	41.38	—	4.16	8.31
Haverhill	27,445	15	1	6.66	66.67	—	6.66	—
Lowell	44,456	26	1	36.90	—	—	—	—
Gloucester	24,651	26	1	—	11.11	—	—	—
Newton	24,379	7	1	—	42.84	—	—	—
Malden	25,031	26	5	5.00	15.00	—	—	—
Pittsburg	27,475	12	2	—	—	—	—	—
Wellesley	18,767	10	2	—	29.00	—	—	—
Pittsfield	17,281	4	2	—	75.00	—	—	—
Quincy	16,720	11	—	—	27.27	—	—	—
Newburyport	15,947	17	3	11.76	35.58	—	—	—
Marlboro	11,494	1	0	—	20.00	—	20.00	—
Clinton	10,424	5	—	—	20.00	40.00	—	—
Hyde Park	10,193	6	0	—	66.66	—	—	—
Peabody	10,158	6	0	—	—	—	—	—

Deaths reported 3,532: under five years of age 1,168; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 518, acute lung diseases 867, consumption 351, diphtheria and croup 201, typhoid fever 108, scarlet fever 88, diarrhoeal diseases 44, whooping-cough 24, cerebro-spinal meningitis 20, mumps 16, erysipelas 12, malarial fever 3.

measles 16, erysipelas 13, malarial fever 3.
From diarrhoeal diseases Chicago 14, New York 11, Cincinnati 4, Brooklyn, Boston, Nashville and Fall River 2 each, Cleveland, Milwaukee, Washington, Worcester, Lowell, Cambridge and Lawrence 1 each. From whooping-cough New York 7, Chicago and Washington 4 each, Cleveland and Pittsburgh 2 each, Brooklyn, Milwaukee, Gloucester, Malden and Newburyport 1 each. From cerebro-spinal meningitis Chicago 6, New York and Washington 3 each, Brooklyn and Lowell 2 each, Boston, Portland, Lynn and Lawrence 1 each. From measles

New York 12, Chicago 3, Milwaukee 1. From erysipelas New York 4, Chicago 2, Brooklyn, Boston, Cleveland, Pittsburgh, Washington and Lowell 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending January 9th, the death-rate was 28.7. Deaths reported 5,612: acute diseases of the respiratory organs (London) 1,084, whooping-cough 248, measles 365, scarlet fever 44, diarrhoea 37, diphtheria 32, fever 23.

The death-rates ranged from 15.7 in Croydon to 43.7 in Newcastle-on-Tyne; Birmingham 18.8, Bradford 16.6, Bristol 24.7, Derby 27.1, Gateshead 27.1, Leeds 26.4, Liverpool 36.3, London 32.8, Manchester 24.0, Nottingham 19.9, Sheffield 25.2, West Ham 29.5.

METEOROLOGICAL RECORD.

For the week ending January 16, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Baro. Daily mean.		Thermometer. Daily mean.		Relative humidity.		Direction of wind. Daily mean.		Velocity of wind. 8.00 A. M. 8.00 P. M.		Wind at 8 o'clock. 8.00 A. M. 8.00 P. M.		Wind at 4 P.M. 8.00 A. M. 8.00 P. M.		Rainfall in inches.			
	Daily maximum.	Daily minimum.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.
S.—10	30.61	22	27	16	70	46	N.W.	N.W.	8	15	C.	O.						
M.—11	30.59	23	26	20	86	94	N.	N.	24	16	N.	N.	.65					
T.—12	30.41	30	35	25	106	100	N.W.	N.W.	10	10	R.	R.	.67					
W.—13	30.29	37	40	36	96	98	E.	E.	5	9	R.	R.	.67					
F.—14	29.99	51	63	58	100	91	S.W.	S.W.	22	12	O.	O.	.46					
G.—15	30.15	30	36	25	91	94	N.	N.W.	14	13	R.	N.	.48					
S.—16	30.47	20	25	11	71	66	N.W.	N.W.	15	10	O.	C.	T.					
SP.	30.34	30	36	24	89	84	88		14	11								

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threat; ening; N, snow. + Indicates trace of rainfall. — Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 15, 1892, TO JANUARY 22, 1892.

Leave of absence for twenty-one days is granted MAJOR ROBERT M. O'REILLY, surgeon, U. S. A., Fort Logan, Col.

CAPTAIN LOUIS BRECHMEN, assistant surgeon, U. S. A., will proceed, without delay, from the Presidio of San Francisco, Cal., to Vancouver Barracks, Wash., and report in person to the commanding officer of that post for temporary duty.

CAPTAIN AARON H. APPEL, assistant surgeon, U. S. A., is relieved from duty at Fort D. A. Russell, Wyo., and will report to the commanding officer, Fort Buford, N. D., relieving FIRST LIEUTENANT JULIAN M. CABELL, assistant surgeon, who will then report in person for duty at Fort D. A. Russell, Wyo.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 23, 1892.

W. G. FARWELL, surgeon, detached from Naval Hospital, Norfolk, and wait orders.

DRAKE, passed assistant surgeon, ordered to the Naval Hospital, Chelsea, Mass.

GEORGE McC. PICKRELL, passed assistant surgeon, detached from Naval Hospital, Chelsea, and to Naval Hospital, Norfolk.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDING JANUARY 16, 1892.

IRWIN, FAIRFAX, surgeon. Granted leave of absence for seven days. January 13, 1892.

CARTER, H. R., passed assistant surgeon. To proceed to Cincinnati, O., and assume command of the service. January 8, 1892.

BROOKS, S. D., passed assistant surgeon. To inspect unserviceable property at Marine Hospital, Detroit, Mich. December 23, 1891.

WILLIAMS, L. L., passed assistant surgeon. Granted leave of absence for twenty days. January 12 and 13, 1892.

PETTUS, W. J., passed assistant surgeon. To proceed to

Buffalo, N. Y., and assume command of the service. December 21, 1891.

MAGRUDER, G. M., passed assistant surgeon. Relieved from duty at Washington, D. C.; ordered to Marine Hospital, New Orleans, La. January 8, 1892.

PERRY, T. B., passed assistant surgeon. To proceed to Cape Charles Quarantine for temporary duty. January 13, 1892.

DEATH.

LONG, W. H., surgeon. Died at Cincinnati, O., January 5, 1892.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—A regular meeting will be held at 19 Boylston Place, on Monday, February 1, 1892, at 8 o'clock.

Read: Dr. E. S. Wood, "Renal Albuminuria not Due to Organic Disease of the Kidneys"; Dr. C. P. Worcester, "The Relative Values of Certain Meat Extracts."

JOHN C. MUNRO, M.D., Secretary.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.—This Section will hold its regular monthly meeting Wednesday evening, February 3, 1892, at 19 Boylston Place.

Papers: Dr. E. H. Bradford, "Operations on the Tarsus for Club-Foot"; Dr. A. M. Phelps, of New York City, will describe his "Method of Open Incision for Club-Foot"; Dr. Augustus Thorndike, "The Case of Club-Foot in the Adult"; Dr. John H. Hudspeth, "Pott's Paralysis"; Dr. Wm. N. Bullard and Dr. C. L. Scudder, "Spastic Paralysis"; Dr. E. G. Brackett, "Torticollis Due to Hemiatrophy of the Sterno-Cleido-Mastoid Muscle."

CHARLES L. SCUDDER, M.D., Secretary.

NORFOLK DISTRICT MEDICAL SOCIETY.—The fellows of the Norfolk District Medical Society resident in Jamaica Plain will entertain the Society at the Club House of the Jamaica Club, on Saturday, January 29th, at 7.45 p. m. [Please note change of date.]

Dr. E. W. Hill, "Some Cases of Malarial Epilepsy. Advantages of Sulphonate Treatment of Epileptics." To be followed by general discussion upon Epilepsy by Drs. W. Channing, J. H. McCollum, S. J. Mixter, H. R. Stedman and others.

Collation at 9.30.

The Club House is located on Green St., corner of Rockview Street, Jamaica Plain, three minutes walk from Rockview Railroad Station. Train from Boston at 7.35 p. m., return at 9.27, 10.40, 10.50. The electric cars of the Jamaica Plain and the Egleston Square lines stop at Green Street, at short intervals.

JAMES C. D. PIGEON, M.D., Secretary.

RECENT DEATHS.

CLAUDIUS MARCELLUS JONES, M.D., M.M.S.S., died at the Massachusetts General Hospital, January 24th, aged forty-six. Dr. Jones was born in Worcester in 1845, and graduated from Harvard College in 1866. He spent some years in teaching before entering the Harvard Medical School, from which he graduated in 1875. He served for a year as house-officer at the Massachusetts General Hospital. He was, at the time of his death, physician to the Boston Dispensary, the House of the Good Samaritan and St. Monica's Home.

DANIEL AYRES, M.D., died in Brooklyn, N. Y., January 18th, aged seventeen. He graduated from the University of New York in 1844, and received the honorary degree of LL.D. from Wesleyan in 1856. He was Surgeon and Professor of Clinical Surgery in the Long Island College Hospital until 1874, when he was made Professor Emeritus.

JOHN WITT RANDALL, M.D., died in Boston, January 29th, aged seventy-eight. He graduated from Harvard College in 1834, and from the Medical School in 1839. He devoted most of his life to the study of natural history, especially entomology.

EUGENE MONTARD-MARTIN, M.D., Physician to the Hôtel Dieu, Paris, President of the Académie de Médecine in 1890, died recently in Paris, aged seventy.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of the Bladder and Prostate. By Hall C. Wyman, M.Sc., M.D. Detroit; George S. Davis. 1891.

Atlas of Clinical Medicine. By Bryton Bramwell, M.D., F.R.C.P., F.R.S., Assistant Physician to the Edinburgh Royal Infirmary. Volume I, Part III. Edinburgh: T. and A. Constable. 1891.

The Prescriber's Pharmacopœia, a Synopsis of the More Recent Remedies with a Therapeutic Index. By a member of the Pharmaceutical Society of Great Britain. Second edition. Bombay: Kemp & Co. Limited. 1891.

Original Articles.**SOME DANGERS OF INFECTION INCIDENTAL TO PROFESSIONAL LIFE.¹**

BY JAMES C. WHITE, M.D.,
Professor of Dermatology in Harvard University.

I HAVE been consulted within the last ten years by so many physicians on account of diseases they have acquired by contact with patients, that I have thought that it might not be without interest, and perhaps profit to members of the Society, if I were to present to them in a brief form some of the dangers to which they are thus especially exposed. It is not my intention in this communication to consider what possible relation every disease regarded as contagious or infectious may bear to our subject, but I shall confine my remarks to those affections which are largely, if not wholly, acquired by contact alone. I shall exclude, therefore, all mention of the so-called acute contagious or infectious fevers, the liability and consequences of acquiring which are well understood. It may be well also to state in the beginning that I shall use the terms infection and contagion indifferently throughout this paper. I shall make no attempt to present my subject in any systematic order.

ANIMAL PARASITES.

But little need be said with regard to the danger of acquiring any of the affections of this group. Of the three forms of pediculosis it is the variety *capillitii* only which the physician is liable to. It is by no means an uncommon occurrence for him to "get lice," as the expression is, in the performance of auscultation, chiefly among the poorer classes in cities, with whom it is extremely prevalent, and to carry it home to his family. It is the wife, however, generally who is the chief sufferer in such cases, for it is in her longer hair that the parasite finds the more favorable conditions for breeding, whilst in the very short hair of the doctor, as now worn, it rarely establishes a permanent seat. I have known not a few such instances in the households of members of this Society.

Scabies is the only other form of animal parasitic disease which the physician is liable to acquire by contact with patients, for although he may often be annoyed by the bites of bugs and fleas, so frequently found in the homes and upon the persons of the poor and dirty, their brief action upon his skin is but a trifling matter. The itch, however, is a much more serious affair, and as it has become a very common affection amongst us in the last few years (sixty-one cases seen at my clinic since October 1st), and as physicians often fail to recognize it, even in the most exaggerated cases when consulted, opportunities for its acquisition by themselves cannot be infrequent. Their exemption under these circumstances (for in my experience such cases of transference are not common, I can recall but one or two) is due, no doubt, to the fact that patients with scabies are handled at the dispensary or consult-on-room when their hands and general surfaces are by exposure at a lower temperature than is conducive to the activity of the parasite, and because contact with the affected parts during a professional examination is necessarily very brief. Transference

of the animal from one person to another is most generally effected, no doubt, by holding the hand for some time, or by longer surface contact with other affected parts of the body in bed, or during impure sexual intercourse. All possibility of such infection can be positively removed by adopting the custom of washing the hands immediately after handling any suspected patient.

VEGETABLE PARASITES.

When I was a young physician I wrote a Boylston essay upon human parasites, and this portion of my subject then comprised only three surface forms of fungus disease. Now we know that the class of vegetable parasites has been greatly enlarged, and includes some of the most important and fatal affections. Those forms were the easily recognized *tinea favosa*, *tinea trichophytina* and *tinea versicolor*. I have known but a single instance of the probable communication of any of these mycoses to the physician by ordinary contact with patients. This was a long continued *tinea trichophytina* of the finger-nails. The other two forms are transferred from person to person with the greatest difficulty, even when inoculation is intentionally practised. All the forms may, I believe, be freely handled and examined with impunity, provided the hands and instruments be immediately and thoroughly washed after contact.

There are two affections as to the contagious character of which there can be no doubt, and which are frequently transferred from animals to man. These are anthrax and equinia.

Anthrax.—The former, or splenic fever of horned cattle, sheep, horses and rabbits, is capable of causing internal general anthrax in man by inhalation of the infectious material, the *bacillus anthracis*, an wool-sorster's disease, without any accompanying cutaneous manifestations, as well as the so-called malignant pustule, by direct inoculation, as seen in butchers, grooms, tanners, skin-dressers, and the like. It is apparent that the veterinary surgeon is also liable to acquire the disease by the care of affected animals, or by post-mortem examinations of the same. It is also evident that the physician may become inoculated by the dissection of patients who have died of the disease, but a question of more general interest is whether he may become infected by contact with its external forms upon man. I find no record of such transferrence from patient to physician, but I see no improbability in its occurrence.

Equinia.—In glanders also we have a bacillus disease which is readily transferred from horses and asses to man, and from the latter to animals again by inoculation. As it not infrequently affects grooms, so, too, the veterinary surgeon is especially in danger of acquiring it. The virus may also be received by driving behind an affected horse, through contact of the spray from the beast's nostrils with the mouth or eye. In the acute form of farcy in man only about one-third of the cases recover. A few instances are on record where it has been transferred from man to man. It is possible, therefore, that the physician may be inoculated during attendance upon a patient.

Diphtheria is another bacillus disease which has been often transferred with fatal results from patient to physician, generally accomplished by sucking out bits of membrane after tracheotomy. Two members of this Society have become infected during attendance

¹ Read before the Boston Society for Medical Improvement, December 14, 1891.

upon patients, one fatally, by such direct inoculation. It should not be forgotten that the Klebs-Löffler bacillus may persist in the mouth for ten or more days after the disappearance of the membrane in the throat, and that the vitality of these germs may remain active for months after their removal from an animal basis.

Gonorrhœa. — The dangerous consequences to the eye of the surgeon of contact with the specific discharge in gonorrhœa must not be omitted from this list of infective accidents.

Erysipelas. — With regard to the contagious character of erysipelas diverse opinions prevail, although there is no longer a question as to its parasitic nature. The micrococcus is found in the lymphatic vessels and spaces in all cases, and has repeatedly reproduced the disease after cultivation when inoculated into the healthy skin of man. One understands, therefore, how the affection might be transferred from person to person, from patient to physician. Common belief has it that there is great danger of such communication, an opinion largely held apparently by our profession as well. I do not doubt the possibility of such transference, but I believe that it rarely occurs; I refer to the ordinary superficial forms of the affection. In the great number of cases that I have treated I have not known a single instance in which a second member of the family, a nurse, or medical attendant has become affected. At a meeting of the American Dermatological Association, held a few years ago, during a discussion upon the disease I asked if any of the twenty dermatologists present had personal knowledge of such an occurrence, and but one member could reply that he had observed a case in which such communication seemed to have taken place. Considering the frequency of the disease, we may conclude that erysipelas is contagious in a very feeble degree only. Considering its frequency, we must also conclude that the germs are often at hand to gain entrance through some unprotected point, as the chronic picked or sore nose, sore eyelid, or other abraded and exposed surface. This almost necessary connection with traumatism must largely account for its prevalence in the surgical wards of hospitals. Practically, the physician with a sound epidermis is sufficiently protected against the contagion of erysipelas.

Actinomycosis. — Now that we know that the ray fungus, a streptothrix, — which produces in domestic cattle "wen," "osteo-sarcoma," "bony sarcoma," and "wooden tongue," in the horse "scirrous cord," in the pig abscesses in the milk glands and about the pharynx, — is also capable of producing disease in the tissues of man, the alveoli, the tonsils, the glands, lungs, and bones, and that it may be cultivated and thereafter successfully inoculated into rabbits and other animals, we have one more possible source of infection to avoid in the manipulation of disease. Our knowledge of the existence of actinomycosis in man is of too brief duration to furnish the clinical data, by which the reality of such danger may be estimated.

Rhino-scleroma must not be omitted from our list of bacillus and possibly infectious diseases, but it is extremely rare, and, so far as I am cognizant, we have no evidence of its transference from one person to another.

Leprosy, Tuberculosis, Syphilis. — There remain to be considered in their positive relations to our subject three of the most important diseases which affect man, and which are the chief destroyers of the human race. These are leprosy, tuberculosis, and syphilis. The first

two are known to be bacillus affections. The latter has not yet been demonstrated to be such, as the first had not been in 1879, and the second in 1881. Still, the bacillus was present in them all the while previous to these dates, just as I doubt not one has always been, and is in the tissues of every case of syphilis. We shall yet find the proper reagent for its recognition. All three of them are contagious in the sense of being communicable from one person to another under favorable conditions, by contact or inoculation. The question which immediately concerns us is, how far does ordinary professional intercourse between the physician and the patient make such transference possible?

Lepra. — In a communication made to this Society a year ago, I presented the evidence upon which modern belief in the contagiousness of leprosy is founded. These data, very briefly restated, were: a study of the history of the introduction of the disease into Europe in the twelfth and thirteenth centuries, and its disappearance under stringent laws of segregation; its lingering in force in certain civilized countries under the protective patronage of the doctrine of heredity, and its rapid shrinking from 3,000 to 800 cases in the same regions under a revival of the practice of isolation in the present generation; the enormous spread in our day of the disease on fresh introduction among virgin nations, whose customs and morals especially favor its transference by personal contact; the opportunities afforded of studying its restricted spread along family lines on its recent appearance in certain limited foci in the United States and adjoining British Provinces; and lastly, numerous well authenticated instances of servants, ward-tenders, nurses and priests becoming affected by the disease after prolonged attendance upon hospital lepers. In fact, I do not hesitate to state that we are acquainted with many more cases of leprosy acquired by hospital attendants than with instances of syphilis similarly communicated to nurses and ward-tenders in syphilitic wards. Nor should the successful results of the inoculation of the condemned murderer, by Dr. Arning, in the Hawaiian Islands, although not an absolute demonstration, be forgotten.

The presence of bacilli in all affected tissues, in the secretions and discharges, and the open condition of the numerous cutaneous lesions in leprosy, offer the most favorable conditions for inoculation on the part of the patient throughout the prolonged course of the disease. On the other hand, the protracted period of incubation after inoculation, from one to five years probably, makes the recognition of such instances of direct communication vastly more difficult than in syphilis. If these nurses and ward-tenders and priests may and do become lepers, in consequence of their attendance upon lepers, it is evident that physicians may also acquire the disease by personal contact with patients. Two Hawaiian physicians, not natives, are known to have become affected by it.

But, it may be said, this is a very remote danger to ourselves as practitioners, for leprosy is not a disease of our part of the world. It is true that there are not 250,000 lepers in the United States, as there are in India, and that they do not form considerate percentage of our population, 1:15, as in the Sandwich Islands, yet the disease has established a foothold in many of our States — in South Carolina, Florida, Louisiana, Texas, California, Oregon, Wisconsin, Minnesota, Dakota, and Utah. Last year there

were certainly six cases in New York City, four in Philadelphia, and two in Boston. These are the cases that have been recognized; they are but a part only, no doubt, of the number that really exist amongst us. Fifteen years ago it was scarcely known that outside of our Scandinavian States there was a leper in the country; now there are one hundred in one town in Florida alone. The disease is bound to increase with all these foci in our midst, if the national government do not take immediate steps for its exclusion by proper immigration laws, and for its segregation within our boundaries, while it yet remains in manageable numbers. Practically, there need be no dread on the part of the physician to handle any case of leprosy in the freest way under a few simple precautions: that the epidermal covering of his hands is intact, that he never allows himself to touch an excoriated lesion or the various discharges of the patient, and that he invariably washes his hands in the most thorough manner after his examination of every case.

Tuberculosis. — I have so lately expressed my views² concerning the unity and contagiousness of the several phases of this disease of many shapes, that I hardly need say more with regard to their recognition and interchangeable nature. In lupus, verruca necrogenica, tuberculosis cutis, and scrofuloderma, as in other forms less commonly well known, we find the same bacillus, the same as in tuberculous disease of other organs, capable of cultivation and of producing one and the same disease in animals on inoculation, from whichever of these clinical forms it is taken. Conclusive evidence has been collected moreover that one form may produce the same or another when inoculated or transferred from one tissue to another tissue of the same person, or to the tissues of a second person. The common nature and the common danger of all forms of tuberculosis having been established, the question which especially concerns us now is in what way and in what form is the disease most likely to be communicated to the physician or surgeon. We know the possible dangers incident to the inhalation of the air of wards for consumptives up to the recent date of our knowledge concerning the nature of sputa at that disease, and those connected with auscultation and other forms of close contact with contaminated garments and the patient's exhalations. There are other channels of infection not so generally appreciated.

The verruca necrogenica, or anatomical tubercle, has long been known as affecting the fingers of dissectors and autopsy-makers, but it is only within a few years that its tuberculous nature has been known. Lately a much more extensive verrucose affection of the integument has become recognized also as a true cutaneous tuberculosis, and entitled tuberculosis verrucosa. Both forms contain the tubercle bacillus, and are in fact anatomically identical in all respects. The first named clinical form is undoubtedly acquired in the dissecting and necropsy rooms by contact with tuberculous tissues of the cadaver. The latter, much more extensive and sometimes multiple, is often acquired, I believe, by contact with phthisical sputa and open scrofulous glands. I have seen it repeatedly upon the hands of consumptives, and those in attendance upon them and patients with scrofulous ulcers. One may therefore acquire cutaneous forms of tuberculosis by making dissections and autopsies, by examinations of all external forms of the disease, by surgical opera-

tions upon "scrofulous" gland, bone and joint disease, and by contact with phthisical sputa. That cases of inoculation among physicians, considering the great prevalence of these many forms of the disease, are not more common, may be attributed to the protective nature of a sound epidermis. That none of us may surely escape such danger will be apparent to you, when I state that two members of this body have thus acquired tuberculosis verrucosa, and I have treated several students with verruca necrogenica. It is indeed fortunate that such forms of the disease tend to remain strictly localized cutaneous processes for indefinite periods, and not to become foci for dissemination of the bacillus to internal vital organs, as do the softening varieties, lupus and scrofuloderma, in so large a percentage of cases.

Syphilis. — This is an affection, with the appearances of which the practitioner is presumed to be familiar, and with the dangerously infective properties of which he is fully acquainted. It might be supposed, therefore, that, being constantly upon his guard, it would be a rare occurrence that he should become infected through patients. Unfortunately the reverse is the case. This may be due to lack of proper knowledge of all the manifestations of this protean disease, to inattention to the necessary precautions in handling cases, or to the masked or concealed lesions with which he may come in contact during surgical or obstetrical manipulations. Certain it is that for one or all of these reasons physicians often become inoculated with syphilitic virus through their own hands. Another unfortunate feature in the history of these cases is that they rarely recognize the real character of the early lesion upon themselves, accepting every possible and often impossible diagnosis as to its nature, before the correct one is forced upon them. They, too, are apparently blinded by the commonly received opinion that syphilis is necessarily a venereal disease, and therefore disregard the liability of contracting it through extra-venereal channels, and the dangers of contact with other than genital lesions. Accordingly the digital primary lesion is generally regarded as a felon, a septic sore, a local tuberculosis, or even a malignant process at first, or until a perfectly defined syphilitoderm, or other signs of general infection, make clear the nature of the former. I have seen all these mistakes made, and, when the later constitutional symptoms were slight or fugitive in character, have seen the erroneous diagnosis persisted in for months, in one instance until amputation was seriously considered by patient and surgeon as the only possible means of relief. It is astonishing how wide and deep may be the tissue changes in the integument, which in time develop around the primary inoculation in some such cases. In the beginning, however, the earliest manifestations may be of the most insignificant and apparently trivial character. The primary lesion of syphilis is by no means necessarily the expected standard chancre, it may be a small papule, an excoration, or an ulcer of very misleading appearance. It is not, however, my intention even to touch upon the diagnostic features of any of the affections we are considering. I have notes of fifteen cases of syphilis in physicians, and I have seen and known of others, who were inoculated upon the hands during the discharge of their professional duties. The seat of the primary lesion was determined in the majority of them by inspection, in the remainder by data obtained from the

victims. They were mostly severe cases, perhaps because, for reasons above given, the diagnosis was made late and, therefore, treatment was begun late, perhaps because there is truth in the common saying that physicians make bad patients, and treatment under the divided responsibility of the consultant and sufferer was negligently conducted. I know no disease which demands so absolute and constant a surrender of the patient's will to the control of the physician as syphilis. Three of these unfortunates, possibly more, died of the disease. All of them suffered greatly in mind, and were more or less physically disabled or disfigured for a time. Some of them might readily have communicated the disease to their own households or to patients, before the nature of the digital affection was recognized. I once treated a midwife with an open primary lesion upon her finger. I found that she had delivered thirty-two women whilst the sore was in this condition. How many of these lying-in women, or of the infants handled by her may she not have infected? Yet I believe that every case of syphilis may be handled as thoroughly as the needs of diagnosis demand. The sound epidermis is a safe shield against the reception of the virus as a rule, no doubt, but the hang-nail, or the slight fissure, or excoriation forms the fatal point of entrance.

Two practical lessons have enforced themselves upon me from my experience in this relation: First, always to wash one's hands immediately after an interview with a patient who has, or is suspected to have syphilis, without regard to the condition of the parts handled, or even if not touched at all. This should be made an invariable custom. Second, that the physician should regard every persistent sore upon himself of whatever seat and however innocent apparently, as a possible lesion of tuberculosis or syphilis, and seek competent advice without delay. Such advice is never found at home.

I have thus briefly, and very inadequately, I am aware, called your attention to some of the dangers to which the physician is liable in his daily work. The agents of all the evils we have been considering are among the most minute and lowest forms of organized life. In spite of recent disappointments in the resources of pure science applied to this end by the most eminent masters, let us not forget that one most destructive pest was long ago robbed of power over mankind by the keen observation alone of a plain country physician, and trust that, in the one way or the other, some day these afflictions, we have been considering, may likewise be rendered innocuous to us and all men by the protective action of some beneficent influence.

WHAT IS A "FELON"?¹

BY HERBERT L. BURRILL, M.D.,

Assistant Visiting Surgeon, Boston City Hospital; Instructor in Clinical Surgery, Harvard University.

As a member of the Suffolk Board of Censors I have asked the above question of many applicants for admission to the Massachusetts Medical Society, and have received answers which have convinced me that the term "felon" is loosely applied. A search in the common text-books on surgery shows, as a rule, the neglect to clinically differentiate the inflammatory diseases of the finger.

¹ Read before the Boston Society for Medical Improvement, December 14, 1891.

There can be no question of the difference between a simple "run-round," which, although troublesome, is rarely dangerous, and that serious, destructive suppuration which destroys not alone the usefulness of the finger and hand, but occasionally ends fatally. Yet the distinction in name, at least, is frequently not made. I feel sure that most practitioners distinguish various affections of the fingers; and in this paper I shall place before you a classification that I have used in my work, which has enabled me to meet these cases with a greater sense of accuracy. It is an anatomical classification, and is as follows:

- (1) Dermatitis.
- (2) Paronychia.
- (3) Cellulitis of the finger.
- (4) Suppurative theritis.
- (5) Periosteitis, or osteitis of the phalanges.

I believe that it will be granted by all that it will be of value to differentiate these several affections, and, as a matter of fact, I have found it possible to do so in my clinical work. Whether I shall succeed in placing their clinical histories before you will be a matter of which you alone can judge.

I. DERMATITIS.

In a dermatitis we have a clinical history somewhat as follows: Usually the starting-point is some slight abrasion of the cuticle covering the end of the finger, and from this point there starts a reddened area with slight elevation of the skin, with a stinging, smarting pain, which is not intense enough to prevent sleep. The finger when held dependent is more painful than when supported. This red, slightly elevated area involves both the epidermis and the derma. Vesicles form from point to point, these become pustules, and the dermal inflammation which extends is temporarily checked at the different flexures of the fingers until it involves the whole finger, and occasionally spreads on to the palm or dorsum of the hand. Copper workers, zinc workers and paper-box workmen are particularly apt to have this trouble. It is purely a local affection, and is self-limited when the cause is removed. Its treatment may be carried out by the application of any one of the astringent lotions like liq. plumb., subacet., or, what is preferable, a 1-20000 solution of corrosive sublimate. This, in the course of forty-eight to sixty hours, will check the dermal inflammation, as a rule, and then exfoliation of the skin of the finger will occur.

II. PARONYCHIA.

This is a form of inflammation which occurs in the structures lying at the root of a nail, and it may appear when any crack has occurred in the skin overlying the luna of the nail. Usually a smarting, stinging, or throbbing pain exists for a few hours, definitely localized in a tender, reddened area at the point of infection; for I believe that usually this is the result of inoculation. (House-surgeons used to be particularly liable to this affection, but of late years have had less trouble). At the end of one or two days there is usually a small area of pus, and at this time by appropriate surgical interference a great deal of trouble can be averted. If, on the other hand, this is neglected the pus is retained by the tense band of the union of the derma at this point, and passes downward to the matrix of the nail, and then begins to burrow beneath the nail. This occurs at the end of four or five days,

until finally the matrix of the nail is completely undermined, and the nail is thrown off at the end of several weeks or months. This process may stop and the pus be discharged from beneath the skin covering the luna of the nail, in which case the nail is not lost. When, however, the process passes down beneath the nail the pus continues to discharge, at times changing to a thin, straw-colored fluid, the skin at the root of the nail becomes a livid white, is sodden and saturated with purulent material, until relief is afforded by allowing a free exit for the retained fluids.

The early treatment of this affection is very simple. The part of the skin overlying the luna should be thoroughly divided, so that pus is evacuated. It may be necessary to use primary anesthesia or cocaine. Then a moist, hot, antiseptic dressing¹ should be applied and changed once in four hours, and usually at the end of twenty-four to forty-eight hours wrinkling of the skin, subsidence of redness and pain having occurred, the process is checked. After this a dry dressing, like aristol, can be used to advantage; but if there is any recurrence of active inflammation, a moist, hot, antiseptic dressing should again be used.

Not infrequently this simple treatment is futile, for as soon as the moist, hot, antiseptic dressing is resumed the soft parts at the root of the nail become actively inflamed again, and when this occurs one may abandon an antiseptic dressing, and attach the free end of a narrow strip of adhesive plaster (three-eighths to half an inch wide and four-fifths of an inch long) to the side of the finger, and wrap it around the finger in a spiral. This attachment of plaster draws away the skin from the nail, and into the sulcus nitrate of lead may be dusted. This "drys" up the discharge, and is of assistance in checking an obstinate inflammation at the root of a nail.

When the pus has passed down beneath the nail, or the end of the finger has become sodden and club-shaped from the retained purulent material, the nail should be removed, care being taken to remove the lateral expansions at the root of the nail; this allows a free exit of the pus, and the use of any antiseptic dressing will quickly put the finger on the road to recovery. Nails grow in from four to six months.

III. CELLULITIS OF THE FINGER.

In the clinical history of this affection there is usually a story of a contusion or a direct inoculation by a pin or needle, and then within twelve or twenty-four hours there begins a throbbing pain distinctly localized at one point on the palmar surface of the finger. This gradually becomes reddened, slightly dusky, and the whole finger end becomes tense from the swelling. The throbbing pain continues, but is rarely sufficient to keep the patient awake the first, or even the second night. By the third night the pain is usually so intense that the patient will have simply "cat-naps." Usually before this a poultice has been applied, and the pus has more or less localized itself at some point on the extremity of the finger.

The treatment is simple, not imperative. It requires a limited incision into the pulp of the finger; a thorough evacuation of the pus; and the application of a moist, hot, antiseptic dressing.

¹ This should consist of clean gauze or absorbent cotton wrung out in a solution of 1-2000 of corrosive sublimate; should be generous, so that by its extent and bulk it may macerate all the surrounding parts, and it should be enveloped in some form of "protective," as oil muslin, macintosh or oiled paper, that the heat and moisture may be retained.

Even if an incision is not made in the finger, after a proper amount of poulticing the pus will evacuate itself, and, although, possibly an unpleasant scar will be left on the finger no permanent impairment of the finger tip will occur; so that the prognosis of this affection is good.

IV. SUPPURATIVE THECITIS.

This affection may be due either to direct inoculation by a needle or pin; severe bruising of the soft parts overlying the tendons; or a long-continued use of the flexor tendons in a patient unaccustomed to their use; for instance, stone-masons who have been out of work for a time, and who on returning to their work have to handle rough stones which they have grown unaccustomed to, occasionally start up a serious suppurative thecitis which involves the fingers and palm of the hand.

The clinical history is as follows: A pulsating, throbbing pain referred to the whole finger is one of the first symptoms noticed. It comes often before much swelling occurs in the finger, and certainly before redness makes its appearance. This throbbing pain is severe, but for the first twenty-four hours does not keep the patient awake. With intelligent patients I have found that they could define accurately the limits of the suppurative process in the sheath of the tendon. Pressure laterally on the finger is painless, while pressure on the tendon is very painful.

The spread of the inflammation up the course of the tendon is delayed at the flexures of the fingers, and starting, for instance, in the middle finger in the second joint, it is usually forty-eight hours before the thecitis has spread to the palm of the hand. The finger is flexed on itself in order to render it less tense, and by the end of the third day the whole finger is involved in the process, and usually relief to the severe throbbing pain occurs suddenly by the bursting of the sheath of the tendon, and thus direct infection of the surrounding cellular parts occurs.

If no relief is afforded by surgical measures the whole finger is soon involved. It becomes tensely swollen; a livid red; exquisitely sensitive; the entire finger assumes the shape of a sausage; the joints are involved in the suppurative process; the sheath of the tendon becomes loaded with pus, and utter destruction of the finger is the result.

If the pus confines itself alone to the finger it will be most fortunate, but usually the inflammatory process extends upwards along the course of the tendons into the palm of the hand, beneath the annular ligament and into the forearm; until the palmar fascia is tensely distended, and the forearm and arm filled with channels of pus. When it reaches this stage often the patient succumbs to the absorption of purulent material, or at best escapes with a hand and forearm crippled by the permanent gluing down of the muscles and tendons.

The treatment of this affection differs so widely from the two preceding ones that it is on this account that I speak so strongly in reference to a division of the diseases known and classed under the head of felon. The earliest surgical interference under ether, with careful antisepsis, will save the finger and the usefulness of the hand.

Any patient who has an early clinical history of thecitis, I should advise to take ether and have a careful incision made down to the sheath of the tendon, which

if found distended can be thoroughly opened, and if necessary further openings can be made at other points in the course of the tendon and the pus allowed to escape. Then the surface should be thoroughly cleansed with an active germicide, 1-2000 corrosive sublimate, and the finger and hand immersed in a hot, moist, antiseptic dressing. Immobilization of the fingers, hand and arm are imperative; for under these circumstances the slightest motion in the flexor tendon may inoculate a fresh surface in the tendon sheath.

If, on the other hand, after making an incision down to the flexor tendon, at the end of twelve or eighteen hours we have no distension of the sheath of the tendon, useless or indiscriminate cuts, which I regret to say are not infrequently made into the palmar surface of the finger, may be avoided. I have notes of four cases where I believe a simple cellulitis of the finger was converted into a suppurative thecitis by an incision made "down to the bone." In one instance the patient's life was sacrificed; in the other the pus extended into the deeper structures of the forearm, and permanently impaired the usefulness of the arm and hand.

The treatment of these cases, when the pus has involved the palm of the hand and forearm, should be by free incisions into all the available parts. These various incisions can be enlarged by Bigelow's dilator, which is like a glove stretcher, and drainage-tubes should be placed connecting the various openings. The hand and arm should then be treated with a hot, moist, antiseptic dressing, changed frequently, or by a continuous antiseptic bath, which is a very useful measure in the severer cases. Amputation of the arm is exceptionally called for.

The prognosis of this affection, if seen early and treated promptly and surgically, is good. A certain amount of stiffness of the finger, the sheath of which has been opened, will remain for a limited period of time; but massage, and a constant use of the hand after healing, will at the end of a few months nearly restore the finger to usefulness. Where, however, the pus has extended into the palm of the hand, and especially when it has involved the wrist and the deeper structures of the forearm, a most guarded prognosis must be given, not alone as regards the use of the arm, hand and fingers, but as to life itself.

V. PERIOSTEITIS, OR OSTEITIS OF THE PHALANGES.

The clinical history of a periosteitis or osteitis of the phalanx is different from the preceding histories. As the result of some contusion, or occasionally by direct infection, we have, usually beginning in the evening, a severe pain definitely localized at some one point on the extremity of the last phalanx. This pain is so intense that sleep is out of the question. The finger may be slightly tense and perhaps glistening, but any marked degree of swelling has not occurred. The pain is so intense that the patient walks the floor, holding the hand and writhing with pain. This continues at varying intervals for from twenty-four to forty-eight and up to sixty hours, when the pain diminishes, the finger becomes more swollen and distended, and of a vivid red color. This relief to pain is due to the bursting of the periosteum, and letting out of the pus into the surrounding parts; then we have added to the osteitis or periosteitis a cellulitis of the soft parts of the finger.

When the pain has persisted longer than three or

four days, or has not been relieved by a free incision, I have inferred that there was an inflammation of the bone itself. Blisters then form on the tip of the finger, until finally pus is discharged, and the finger is converted into a rounded nub of a livid red color, and finally, at the end of from eight to twelve weeks, there is cast off the sequestrum of the necrosed bone. The mischief to the bone in these cases is done very quickly; for it is a form of jugulation of the phalanx that occurs from the pus collecting beneath the sheath of the periosteum.

After the sequestrum has been cast off, at intervals varying from four to eight months, the finger heals, leaving a misshapen extremity, a distorted, curved nail, and a permanently impaired finger-tip.

The treatment of this affection is one requiring the promptest surgical interference. In seven instances I have made a direct incision into a finger within twelve hours of the beginning of the pain, and in each instance found a small area of pus. Here, in each case, the incision was carried directly down to and through the periosteum. In two instances there was not complete relief to pain for two or three days. My belief is that in these cases the original trouble started in the osseous structure of the finger. If the incision is made early and thoroughly, we can frequently save the bone from becoming necrosed; but at the end of forty-eight hours I have found the bone irremediably damaged; and if a patient comes to me with a periosteitis or osteitis at the end of four or five days, I always warn them that the bone has been destroyed by the inflammatory process. This is an important point, for the patient often thinks that the surgical interference is the cause of the loss of the phalanx.

In those cases which come at the end of four or five days with the finger tensely swollen and filled with pus, a free incision hastens the recovery of the parts. In two instances I have removed the phalanx at this time endeavoring to save the periosteum, and in both instances have had a reproduction of a certain proportion of the phalanx.

Where a patient applies for relief at the end of several weeks, with the finger swollen, livid and distended with pus, which has opened at various places about the end of the finger, on introducing a probe one can feel the bare bone, and an operation is necessary for its removal. A certain amount of shaping can be accomplished by adjusting a finger splint to the dorsum of the finger to retain the general shape of the phalanx, and in one instance I was enabled to produce a more slightly tip of the finger in this way.

From the foregoing it will be seen that the prognosis is very grave as regards the fate of the phalanx unless an early operative interference is made. If, on the other hand, the periosteum is opened thoroughly at an early hour the finger-tip may be saved.

It is, perhaps, unnecessary to say that in attempting to classify these various affections I may have failed in making the definitions distinct; nevertheless, in actual practice the above classification has been of practical use to me. That these various affections run one into the other is equally true, and that at times it is impossible to make a clear distinction is true; but if by writing this paper I can throw any light on a more accurate understanding of the subject of felonies my object will have been accomplished.

It has not been uncommon for me to meet cases which have been ignorantly treated. To make an in-

cision down through the periosteum in a case of dermatitis is worse than useless; on the other hand, to fail to make an incision in a case of periosteitis or osteitis of the terminal phalanx at the earliest moment that the case comes to one is criminal negligence.

I have purposely omitted many little details of treatment in order to emphasize the importance of this differentiation of the various diseases which are known under the generic term of felon, and as a result of my personal experience I would suggest the following conclusions:

- (1) That the term "felon" be abolished.
- (2) That an anatomical classification of the inflammatory affections of the finger be adopted.
- (3) That in all cases of periosteitis or osteitis of the phalanx an immediate incision is imperative.
- (4) That in cases of suppurative theritis an anesthetic should be administered, and a careful incision made into the anatomical structures which are involved in the pathological process.

Clinical Department.

TWO CASES OF CORNEAL WOUND WITH PROLAPSE OF IRIS.

BY ALLEN GREENWOOD, M.D., WALTHAM, MASS.

The treatment of these two cases was put under my charge through the kindness of Dr. E. R. Cutler of Waltham.

CASE I. Was called in consultation February 27, 1891, to see J. G., a little girl of ten. About two hours previously she had been using a pair of scissors and accidentally stuck one of the scissor blades into her right eye. On examination the following conditions were found: In the outer margin of the cornea close to the sclera there was a perforating wound about one-eighth of an inch long and running parallel to the edge of the cornea. Caught between the edges of the wound was a bit of the free edge of the iris, it probably having been washed out by the escaping aqueous on the withdrawal of the blade. There was a little blood in the lower part of the anterior chamber. Chloroform was given, and by using a thin flat probe the protruding portion of iris was pushed back and smoothed out. The anterior layer of the iris had been slightly lacerated by the point of the blade. The pupil, which before had shown a V-shaped elongation to the wound, was again restored to nearly its original shape except for a slight nick at its outer edge.

As the prolapse showed no inclination to return, pilocarpine, in one-half per cent. solution was dropped in, and the eyes covered with absorbent cotton and bandaged.

February 28th. Bandage and cotton removed, but as there was no pain or discharge the dressing was re-applied without the lids being opened.

March 1st. Dressing removed, and the eye found in good condition. The corneal wound was healed, and the blood in the anterior chamber had disappeared. The iris showed no signs of inflammation; and the pupil was nearly perfect. Slight amount of photophobia. Pilocarpine was again used. Re-bandaged.

March 2d. Bandages removed for good, as the eye was in excellent condition, there being but little injection of the vessels near the wound. Pilocarpine used as before.

March 3d. The eye causes no trouble, and the pupil is perfectly round and responds normally to light and accommodation.

July 6, 1891. Examined to-day. Pupil normal, and the iris shows no evidence of ever having been injured. The scar being so close to the sclera does not show except on closest inspection. Vision perfect.

CASE II. Was called in consultation June 20, 1891, to see Louise G., a little girl of five, who had had a three-inch board-nail enter her right eye. The nail had been thrown from some height above her, and she had looked up just in time to have it enter the eye. She immediately pulled it out and I saw her about an hour after the injury. As she would not allow the eye to be inspected, chloroform was given, and the following conditions found: The small end of the nail had entered the eye in the lower left-hand quadrant of the cornea, slightly involving the ciliary region. There was a jagged hole in the cornea, about one-eighth of an inch long and one-sixteenth of an inch wide, through which a large piece of iris was protruding. This portion of iris was much lacerated, and had been torn from its attachment at the lower part, as though the nail had taken a direction downward and outward as well as toward the interior of the eye. The anterior chamber was empty, and owing to the position and size of the wound the prolapsed iris would not remain in place when returned. In the upper part of the iris there was quite an extensive ecchymosis. Attempts to replace the prolapsed iris failing, that portion was snipped off and the remaining edges placed inside the anterior chamber as far as possible. A few drops of serine sulphate were then dropped in and the eyes covered with absorbent cotton and bandaged.

The myotic was used, as was pilocarpine subsequently, to prevent the edges of the iris from entering the wound. The cotton and bandages were renewed every day for a week, and then discarded, as the wound had healed and the anterior chamber was again established.

For three weeks there was some photophobia and circumcorneal injection but no pain.

About four weeks after the injury the following conditions were present: A large irregular white scar in the lower left-hand quadrant of the cornea; shallow anterior chamber; and pupil nearly normal in size but drawn down to the scar, where the iris is attached.

Repeated instillations of atropine failed to dilate the pupil but slightly and since then the pupil has been steadily drawn down to the scar, in spite of mydrastics, until it is no larger than a pin's head. There have never been any symptoms of sympathetic trouble in the left eye.

January 5, 1892. Examined to-day. O. D. vision practically *nil*. The scar in the cornea, which extends from the sclera nearly two-thirds of the way to the centre, is not nearly as opaque as at last examination. In the lower part of the iris, exactly in the median line, there is a round opening, about one diameter across, showing through the corneal opacity. Just above and a little to the inside of this is the pupil, which is egg-shaped, about the size of a small pin's head, and having the portion of iris forming its lower point attached to the corneal scar. Except where the iris is attached to the cornea the anterior chamber has been preserved. That portion of lens which can be seen through the small pupil is white and glistening, showing that a traumatic cataract has formed.

Of course, with such an injury a very favorable result could not have been secured, but I think a much better pupil would have resulted if atropia had been used from the start. In regard to the appearance of the eye a better result was obtained than was expected, as the scar is becoming less opaque, and the pupil being so small renders the white lens less conspicuous.

From these two cases, particularly the second, I would draw the following conclusions:

In all cases of marginal wound of the cornea with protrusion of a portion of the iris, where the protruding iris can be successfully replaced, some myotic should be used.

In cases, however, where the protruding portion has to be snipped away and especially where the wound is large and lacerated, some mydriatic should be used from the start to secure ultimately as large a pupil as possible.

An exception might be taken to this last in cases where it was evident that the lens was injured, and where a small pupil would render the subsequent cataract less conspicuous; but then there is the objection, that if a cataract-extraction becomes necessary, from subsequent loss of the other eye, it would be apt to be less successful than if the pupil were large and the iris less adherent.

Of course, every case has to be treated on its own merits, and it would rarely happen that two cases would present exactly similar conditions; but the point I wish to emphasize is, that, in cases of marginal wound in the cornea, the rule of always using a myotic should not be too blindly followed, and I think the use of a myotic in my second case was a mistake, and that a better result would have been obtained by the use of atropia.

A NEW, SAFE AND SURE METHOD TO EXPEDITE DIFFICULT CASES OF LABOR.

BY MARSHALL L. BROWN, M.D., OF ALLSTON, MASS.

DR. PLAYFAIR, F.R.C.P., Professor of Obstetrics of King's College, London, writes recently of an "entirely modern oxytocic by manual pressure applied directly to the uterus to increase the force of feeble pains, etc."¹

It is something like ten years since I commenced the use of the herein-described method² of expediting difficult and retarded cases of labor with pelvic or breech presentations. I have made use of the same method in difficult labors with vertex presentations, since that time, when the presentation was a safe one, and, from any cause, the expulsive pains of the patient seemed inadequate for the delivery of the child.

I well remember the teachings of our professor in obstetrics, Dr. Dix Crosby, of Dartmouth College, who was pre-eminently a practical man, who said that having made out the presentation, as a general rule, we were to wait patiently; we were not to use the blunt hook; we were not to get our finger into the flexure of the joint, at the groin; but we were to wait; nature would eventually accomplish the delivery. I had had a few cases of labor with breech presentations and followed these eminently practical directions and all went well. In the following case they did not work as satisfactorily.

¹ Braithwaite's Retrospect, Part III, January, 1891, p. 200, first two paragraphs.

² Read before the Boston Gynecological Society, 1884.

Mrs. G., a closely-built, vigorous, young woman, weighing one hundred and thirty-five pounds, of sanguine temperament and florid complexion, was taken in her first labor in the afternoon. The night wore away — the following day, the next night, another day, to the third night. Up to this time, everything being natural, the parts cool and moist, the presentation having been early made out, we had kept her courage and hope sustained by telling her that as long as she remained cool, the pulse and temperature natural, the parts moist, there was no cause for anxiety or alarm, and that all would eventually come out right. During the evening the pains increased in strength and duration. The patient became excited at the delay, and called for ether and the instruments, and later in the night begged piteously for them. I finally gave her ether at the commencement of each pain, and while it continued. While giving the ether, in her writhing, she got crosswise on the bed, with her head towards the wall. I gave the towel cone, by means of which the ether was given, to the nurse, and, placing my hands well spread out over the fundus of the womb, I applied a gentle and continuous force in downward and backward pressure, while the pains were on, upon the womb and contents, in the line of the axis of the pelvis. When the pains ceased I stopped the pressure. As the patient made no complaint, I continued applying the force, gradually increasing it at each pain. After an hour or so, on making examination, I found that she was making progress, and the breech was engaging. I continued the application of this force; and after about three hours more of hard labor, on the part of the patient and myself, I had the satisfaction of knowing that the labor would terminate successfully. Meanwhile, however, the husband and friends had become panic-stricken (in spite of my assuring them that all was going on well) and desired counsel. I assented. While the husband was after the counsel, I gradually increased the force applied, until it was all I was capable of exerting with my hands, as before described, upon the abdomen of the patient.

After the breech had passed the upper strait, she made more rapid progress; and at the proper time, when the breech began to be delivered, I passed to the other side of the bed and rendered the necessary assistance and delivered her safely of an eleven pound girl, before the return of the husband with the counsel.

As this was the first time of my applying force in this manner, I felt not a little anxious as to the result although I had reasoned, that, if the force was properly applied, and in the right direction, no harm could be done to the patient. I have to say, however, that she did not complain of any unusual tenderness of the abdomen, and she made as quick and perfect a recovery as any patient I ever had.

I searched the authorities for any description of the application of force applied in this manner, to expedite labor, and have thus far failed to find any mention or hint, of its ever having been before so applied.

From that time to the present, I have made use of this method, and have at times applied so much force as to be apprehensive lest some harm might come to the patient; but in every instance the patients have made speedy and perfectly satisfactory recoveries. From the experience I have had in the use of this method, I am satisfied that it is a safe, sure and satisfactory help in the delivery of difficult and retarded

cases of labor, with either breech or vertex presentations.

Briefly, the method consists in applying a force synchronously with the natural labor pains, by and through the hands of the obstetrician, so spread as to embrace as large a portion of the fundus of the womb, as may be possible, and applied downwards and backwards in the direction of the axis of the pelvis.

The following are directions which should be remembered and followed in making use of this method:

(1) As to the position of the patient. It can best be made use of when the patient is crosswise on the bed, in nearly the same position as when the forceps are to be applied.

(2) The hands of the obstetrician should be so spread as to embrace as large a portion of the fundus of the womb as possible.

(3) The force should be applied when the pain commences, gently at first, gradually increasing it to the end of the pain and should cease with the pain.

(4) The force must be applied downwards and backwards in the direction of the axis of the pelvis.

Finally, certain precautions should be borne in mind in the use of this method:

(1) It should not be used unless the presentation is a safe or deliverable one.

(2) It should not be applied spasmodically by jerks, but with a gentle, gradually increasing pressure.

(3) It should not be used unless the os uteri is dilated or dilatable.

Following the above directions, and bearing in mind the cautions given, this method will, I am sure, be found of great value in difficult and retarded cases of labor, and for the average general practitioner, safer than the forceps.

A CASE OF QUADRANT-ANOPSIA WITH RIGHT SENSORY AND MOTOR HEMIPLAGIA.¹

BY J. J. PUTNAM, M.D.

A YOUNG man, eight years ago, fell on the ice, striking on the left temple. He has a depression in that neighborhood which I suppose may be the result of this fall, although on the other side of the head is an equally marked depression which is unaccounted for. At any rate he had a severe fall and was unconscious after it for two weeks. This was followed by severe headaches from which he suffered very much. They were not localized in the neighborhood of the injury, but were rather diffuse and especially felt in the frontal region. Two years ago, while taking his bath, he had suddenly a strange sensation come over him, felt his right hand suddenly numb. He became almost unconscious. It is a little doubtful whether he had a convulsion or not, but he became hemiplegic on the right side. This lasted only a limited time, about two weeks, and passed away, and at that time he ceased to be troubled with the headaches which had followed him until then. After this he worked steadily until last April, when he again became hemiplegic on the right side. He came to me first a few days ago. He has now partially recovered from his hemiplegia, but improves slowly.

The physical examination shows that this is a well-marked case of sensory hemiplegia, to begin with. The patient is unable to notice differences in tempera-

ture on the right side, and also his sense of position is almost abolished, so that with the eyes shut he is unconscious in what position his fingers or toes or foot or hand are placed. The sense of touch is pretty much abolished.

Not only has he a sensory hemiplegia, but he has a peculiar difficulty in his field of vision, the right lower quadrant being lost out of both fields. There is not complete hemianopsia, which is more common, but loss of a quadrant, which is, so far as I know, quite uncommon. When hemianopsia is due to a lesion in the internal capsule in the neighborhood of the optic thalamus there is generally, as in this case, sensory hemiplegia; but, so far as I know, no case has been reported in which a quadrant was cut out in both eyes from lesion in the capsule. Possibly this lesion took place at the time of the first attack, and he may have had a series of softenings in different parts of the brain. Dr. Seguin considers the cuneus as the probable centre of vision and quotes Dr. Hun's case to show that a lesion involving the lower portion of the cuneus may account for a quadrantic defect. If the pathology of this case is what it seems to be, that is, if the same lesion causes the hemianesthesia and the loss of the quadrant, it would seem as if the optic radiations through the brain must be divisible into two parts just as the cuneus is.

The hemiplegia although well marked is not severe. He can extend his hand, although with some difficulty. With the eyes closed he has marked ataxic movements of the hand. It is interesting to note that the face is affected to a relatively considerable degree. The nasolabial fold is markedly less on the right side than on the other. That is interesting because the fibres for the facial nerve are thought to run quite far forward relatively to the other tracts in the internal capsule. The heart in this case is not diseased.

UNFAVORABLE SECONDARY EFFECTS OF SULPHONAL.

BY JOHN H. GRANT, M.D.,
Hospital Steward, United States Army, Plattsburgh Barracks, N. Y.

RECENTLY, I attended two cases of epidemic influenza (thoracic-nervous), one, a married lady of slight physique, who, after a week's illness, considered herself convalescent, but still suffering from sleeplessness — no sleep for forty-eight hours; sulphonal-Bayer, one scruple in four ounces of hot water, was given at bedtime, which, within a few minutes, caused profuse perspiration and, apparently, a profound sleep. Next morning the patient awakened to find herself unrefreshed and completely prostrated, muscles of the arms and legs flaccid, and unable to turn in bed (voluntary effort wanting) without help. In addition she complained of great constriction of the head and pain, as if, the patient expressed it, "a corkscrew had been inserted" at the vertex. For some days the patient, owing to the muscular weakness, was obliged to remain in bed; in fact, suffered a relapse of the influenza, although not having at any time left her room since first attacked.

The day following Case No. 1, the writer was called to attend a gentleman of middle age, who appeared to be convalescent from an attack of epidemic influenza — an excited imagination and inability to sleep were the subjective symptoms presented. Sulphonal-Bayer,

¹ Read before the Boston Society for Medical Observation, November 2, 1891.

one scruple dissolved in hot water at bedtime, was given, as in the previous case, and with the same immediate action. On calling the next morning the gentleman was found greatly prostrated, hardly able to move a limb, and with the symptoms of constriction and "corkscrew" pain at the vertex, exactly coinciding with the history given in the first case. A relapse of some severity followed, lasting nearly two weeks. In both cases a rapid, but weak and compressible pulse, was noted on the morning following the sulphonal. The sulphonal was preferred as a hypnotic agent because of the supposed "total absence of any injurious effect on the heart," even after continued use. That sulphonal, like all the other recent remedies obtained through the coal-tar series, has a depressant action on muscular structures (the heart included) is inferred; and its use contraindicated in all cases of prostration of the vital forces.

Medical Progress.

RECENT PROGRESS IN THE PATHOLOGY OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

(Concluded from No. 4, page 90.)

TABES DORSALIS.

ERB¹⁵ has recently studied a large number of cases of tabes with reference to the etiology, criticising the report of the German army surgeons, who found only 7.4 per cent. of syphilis in soldiers suffering from tabes. He found that 49 out of 51 officers with tabes had previously had syphilis. Out of 300 patients of the better class, who could naturally give more accurate information, in 33 there was no apparent syphilitic infection; in 267, or 89 per cent., there was infection, 190 having had secondary syphilis and 77 a chancre only. Of the 33 non-syphilitic cases, 19 had suspicious symptoms, and 24 had gonorrhoea. In 12.3 per cent. tabes developed in from one to five years after infection, in 37 per cent. in 6-10 years, in 24.7 per cent. in 11-15 years, in 14.2 per cent. in 16-20, in 4.8 per cent. in 21-25 years, in 1.9 per cent. in 26-30 years, and in 0.7 per cent. in 30-35 years. Out of 5,500 other patients, men from the upper classes, 22.5 per cent. had syphilis. The proportion for women with tabes was about the same as for men. Few, except those who have had syphilis, run the risk of having tabes. Out of 281 cases, in 27 per cent., syphilis was the only cause; in 11 per cent. it was associated with exposure to cold, in 6 per cent. with overwork, in 9.5 per cent. with sexual excess, in 5 per cent. with injuries, in 12 per cent. with neurotic heredity, in 13.5 per cent. with exposure and overwork, in 1.7 with exposure and sexual excess, in 7 per cent. with overwork and sexual excess, and in 4 per cent. with more than three of these factors. In the non-syphilitic cases exposure and sexual excess seemed to be most important factors. In only two cases was there direct heredity, and in only 28 per cent. was there a neurotic taint. Sexual excess seems of some importance, being present in 15.8 per cent. Merchants and officers seemed most commonly affected, probably due to the fact that they are more frequently affected with

syphilis. Although syphilis is the most frequent cause of tabes, tabes does not indicate necessarily a previous syphilis, for many cases of tabes are on record where no evidence of acquired or hereditary syphilis can be obtained.

Minor¹⁶ has recently studied the question of the cause of paraparesis in tabes dorsalis, especially the cause of transitory hemiplegia and paraplegia in the affection. He bases his study upon the case of a young woman who, five years after an attack of syphilis, had paraplegia, with other symptoms of meningo-myelitis. During the paraplegia there was no rigidity, and the knee-jerks were absent; there was also paraparesis of one abductus, contraction of the pupils, Argyll Robertson's symptom, and anesthesia. Soon after shooting pains developed. The paraplegia yielded to anti-syphilitic treatment, but the patient remained with the classical symptoms of tabes. A year later she had severe headache, which also yielded to anti-syphilitic treatment, but it returned in three months, and, although again relieved by treatment, right hemiplegia and aphasia followed, and the patient died a month later. The autopsy showed typical degeneration of the posterior columns. In the cervical portion of the cord there were lepto-meningitis and three myelitic foci in the lateral columns, the thickened membranes containing many vessels with thickened walls filled with leucocytes. Characteristic syphilitic endarteritis was found in the cerebral vessels, with thrombosis in the basilar artery and softening in the left hemisphere. From a study of this case and of the literature, Minor dissent from the view that hemiplegia and paraplegia may be special tabetic symptoms; at least, he regards it as an open question. It seems to him most probable that in the majority of cases, as in his own, hemiplegia and paraplegia are symptoms of ordinary syphilis of the brain and cord, sometimes combined with degeneration of the posterior columns, which, in its turn, is dependent upon syphilis. He doubts if there be any true tabetic paraparesis, but he is disposed to believe that all paralyses in tabes, including a part, at least, of the oculo-motor paralyses, are merely symptoms of syphilis of the cerebral nervous system.

Goldscheider,¹⁷ reporting a case of tabes with marked weakness of the legs and moderate muscular atrophy, where the autopsy showed, beside degeneration of the posterior columns, limited degeneration of the left lateral tract, softening in the left lenticular nucleus, and degeneration of the nerves, considers again the question of the origin of paralysis and atrophy in cases of tabes. After a careful review of reported cases he recognizes, with Déjerine, that, although paralysis and atrophy are due in some cases to affections of the lateral tract and anterior cornua, in others sensory and motor symptoms depend upon peripheral neuritis.

Since Westphal some years ago maintained that, if in disease of the cord, the columns of Burdach at the junction of the dorsal and lumbar portion were involved, the knee-jerks were lost, but that if this region were intact, they were still present, it has been supposed that, in degeneration of the posterior columns affecting only the upper portions of the cord, the knee-jerks were preserved. Eichhorst¹⁸ reports the case of a woman brought to the hospital unconscious with right hemiplegia. As the knee-jerks were absent, tabes was

¹⁵ Zietsehr. f. klin. Med., xix, 401, 1891.

¹⁶ Loc. cit., xix, 444, 1891.

¹⁷ Archiv f. pathol. Anatomie und Physiologie und f. klin. Med., xxv, 25, 1891.

suspected. The autopsy showed, beside the lesion giving rise to hemiplegia, complete degeneration of the posterior columns in the cervical and the upper two-thirds of the dorsal region. Westphal's zone, however, was intact. Further examination revealed extensive neuritis in both crural nerves, showing, therefore, that in cervical tabes the knee-jerks may be absent from coexisting neuritis.

Raymond¹⁹ throws some doubt upon Westphal's position. In a case of tabes of two years' duration, beginning with paralysis of the fourth cranial nerve and followed by thoracic crises, with hyperesthetic areas, pains and muscular weakness in the legs and absence of knee-jerks, the autopsy showed that the lumbar segment of the cord was intact, and that the peripheral nerves were normal. No special mention, however, is made of the crural nerves. The interest of Raymond's case lies in the distribution of the lesion in the posterior columns, and this case is compared with the other autopsies of early cases of tabes. From these cases he finds that, although the location of the lesion is not always absolutely identical, the alterations always involve the centre of the posterior columns, in the form of a sclerosis which lessens from front to back, and which, at first, does not reach the outer edge of the cord. It is always separated from the gray matter by a zone of intact white matter, and, almost always, it involves exclusively the column of Burdach, affecting the column of Goll to a lesser degree if at all. Almost always, independently of this zone of sclerosis, there has been found at some level in the cord a smaller zone of sclerosis contiguous to the posterior median fissure in its anterior portions. In several cases the integrity of the peripheral nerves and the membranes have been confirmed. The regions first involved in tabes are those portions of the median radicular zone which have been found by Flechsig to be synchronous in development and to be the earliest developed in fetal life. The regions which develop later are involved later in the sclerosis. True tabes is therefore a systemic affection of the central nervous system, and is independent of any change in the nerves or the meninges.

EXOPHTHALMIC GOITRE.

Möbius²⁰ gives an excellent digest of recent investigations in the pathology and treatment of this affection. The exophthalmos may, at the outset be unilateral. Stellwag's sign,—an unusual magnitude of the palpebral fissure and infrequent winking—is a symptom of irritation of the muscles that open the eye. Gräfe's sign, however, is present occasionally in other affections and is by no means constant in this affection. Insufficiency of convergence is not uncommon, and it is attended with no diplopia, but with merely a feeling of tension. Paralyses of individual muscles of the eye are not very uncommon. Tremor of the eyelids and nystagmus have been noted in a few cases. The cardiac symptoms are among the earliest observed. Beside the familiar rapid pulse, irregularity, arterial pulsation, palpitation, and angina pectoris may occur, and cardiac murmurs are not uncommon. Goitre is seldom absent, and it usually first affects the lateral portions of the gland. In a few cases of goitre due to other causes the symptoms of this special disease have developed. The resistance of the skin to the electric

current is diminished in the majority of cases, due probably to the increased sweating, but a normal resistance does not invalidate the diagnosis, and it is sometimes present in other conditions. Pigmentation of the skin is occasionally seen, under the forms of vitiligo, bronzing, reddening and pigment spots, which are in rare cases seen in the mucous membranes. Increased sweating, loss of hair, and oedema are also noted. The respiration is often increased, cough is not unusual, and the expansion of the chest is below normal. Digestive disturbances are very common; diarrhoea is most frequently seen, usually of a paroxysmal character; vomiting, icterus, and intestinal atony are also noted. Amenorrhoea is a common symptom. Beside the subjective feeling of increased heat a definite and persistent elevation of temperature may occur. The chief nervous symptoms are a fine tremor (8-9 vibrations a second) one of the most constant signs of the disease; paraparesis, with giving way of the legs, cramps, muscular atrophy, and mental disturbances, varying from irritability, restlessness, and depression to pronounced delusional states. Among the complications are epilepsy, hysteria, paralysis agitans, diabetes, polyuria, tabes, myxedema and syringo-myelia. Rapid pulse and goitre never fail, exophthalmos is almost always constant, and among the other most constant signs are pallor, emaciation, tremor, Stellwag's sign, and increased moisture of the skin. The great majority of patients are women in middle life, and the neurotic taint is an important factor. The course is very variable; a few cases recover, and death is usually due to the cardiac complications. The old hypothesis that the affection is due to disease of the sympathetic must be abandoned in view of recent autopsies. Changes, which Möbius regards as inconclusive, have been found in the medulla; and in a few instances the thymus gland persisted. In England iron, arsenic, and belladonna have met with the most favor in treatment. Digitalis and iodine are not only useless but injurious. Möbius himself has found most help from bromides. Electricity usually gives some relief; generally in the form of galvanism, but of late faradism has proved beneficial in the hands of several observers. Baths, gymnastics, water-cures, and high altitudes have proved beneficial. In several instances treatment of nasal disturbances has given relief. In a number of cases, reported by various observers, very pronounced relief seems to have followed removal of the thyroid, and Lemke, who has operated successfully in two cases, says boldly, "Patients with exophthalmic goitre do not belong in the medical but in the surgical wards." Rest and the avoidance of accidents is imperative. Möbius rejects the theory of disease of the sympathetic or disease of the medulla, and he is not disposed to regard exophthalmic goitre as a neurosis, in the sense that hysteria and epilepsy are neuroses. The proximate cause of the disease is probably a morbidly increased activity of the thyroid gland. This hypothesis is supported by the similarity and points of contrast between exophthalmic goitre and other affections due to a diminished activity of the gland, cachexia strumipriva, myxedema, and cretinism; by the fact that exophthalmic goitre not infrequently develops in old cases of goitre, and by the fact that operative treatment of the goitre sometimes has a material influence upon the disease. As to the cause of the primary disease of the thyroid we know as yet nothing, but it may possibly be due to some poison.

¹⁹ Revue de Médecine, xi, 1, January, 1891.

²⁰ Deutsche Zeitschr. f. Nervenheilk., i, 400. 1891.

CEREBRAL HEMORRHAGE AND SOFTENING.

Dana²¹ has made an elaborate study of 74 autopsies of cases of cerebral hemorrhage and acute softening; 50 cases were hemorrhage, 12 embolism, and 12 thrombosis, 14 of the hemorrhages were meningeal, 32 affected the central ganglia, 23 of these becoming ventricular. Contrary to the usually accepted rule, two-thirds of the cases of embolism affected the arteries on the right side. In regard to the duration of life after a shock, he finds that if the hemorrhage be ventricular the patient is likely to die in from one to three days, if cortical or central, in a week. After a week the patient is likely to live. In his cases hemorrhage was commonest between the ages of thirty and fifty, contrary to foreign statistics, which leads him to speculate as to whether apoplexy may not occur at an earlier age in Americans. He gives the following table for differential diagnosis.

HEMORRHAGE.	SOFTENING.
Between thirty and fifty. Hereditary history of arterial disease.	Early or later age.
Sudden onset with coma and paralysis occurring together, the coma deepening.	Premotor symptoms and more gradual onset, or more transitory coma.
Initial and early rigidity.	Presence of weak heart or endocarditis.
Very unequal pupils.	Slight hemiplegia with anesthesia.
Stertorous breathing and hard, rapid, strong pulse.	Puerperal state.
When convulsions exist, peculiar conjugate deviation, the eyes turning first to one side and then to the other.	
Early rigidity.	
Convulsions.	
Temperature subnormal at first, rising rapidly if case be likely to prove fatal, and temperature higher on paralyzed side.	

REACTION OF DEGENERATION.

Starr and Young²² have made some elaborate electrical researches upon electrical reactions in degenerated muscles. Mr. Young is a practical electrician, suffering from acute anterior poliomyelitis. The reason why degenerated muscles do not respond to the interrupted current is because the current is of too short a duration. An apparatus was devised by which voltaic alternatives could be applied to the muscles, and by a commutator run by an electric motor any number of revolutions could be made. These revolutions were recorded on a chronograph. Starting at a low rate of speed it was found that the muscles responded separately to each reversal of the current. At a higher rate of speed the muscle became permanently contracted, the contraction increasing with the speed up to a certain point, when it began to relax, until finally, with a high rate of speed, no contraction could be obtained. That this failure to contract is not due to fatigue is shown by the fact that, when the speed is diminished, the muscle again contracts. The rate of alternation at which the muscle ceases to respond to a given current is called the critical rate. This critical rate was observed to become higher as the patient improved, and to be higher on the days when he felt vigorous, and these variations in the critical rate are regarded as having a distinct prognostic value. Furthermore under arsenic and strichnine the critical rate was observed to increase for about ten days, and after that to remain stationary or to decline. These tests, therefore, indicate that in giving these drugs in diseases of the cord it is better to give them for ten days,

and then to stop them for ten days; resuming again in like manner. In this way the best results are obtained.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. BEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, November 14, 1891, the President, DR. FREDERICK I. KNIGHT, in the chair.

DR. J. C. WHITE read a paper on
SOME DANGERS OF INFECTION INCIDENTAL TO PROFESSIONAL LIFE.¹

DR. EDWARD WIGGLESWORTH: The value and importance of Dr. White's remarks are self-evident. I wish to say one or two things in corroboration of what he has said. As to the animal parasites, I wonder whether it has occurred to physicians how commonly they are disseminated by horse-cars. I have had quite a number of cases of pediculi capitis the source of which could be traced pretty directly to horse-cars.

With regard to scabies. It is evident that scabies is increasing in a very marked way owing to immigration and to the massing together of our poorer population in tenement houses. Twenty years ago one might not see a case of scabies from one year's end to another, whereas now we have perhaps three to six cases a day in a clinic. It seems as if we were getting into a condition of things in which it was necessary for our hospitals to adopt the same plans as they do in Germany, and more particularly at the hospitals in Paris, for an immediate cure, by a practical flogging of the patient to such an extent as to get down to the neighborhood of the animal, then applying to the skin one strong inunction of something sufficient to kill the insect, regardless of the subsequent dermatitis of traumatic nature thereby occasioned and which will pass away subsequently under almost any or no treatment. We should have, I think, attached to our hospitals, baths for the treatment of scabies in this manner if we would make any headway against the disease.

Dr. White spoke of cases of dissemination of syphilis by midwives. There was one case that some twelve years ago fell under my own notice where I think seventeen people were infected by a midwife from Nova Scotia, who then returned to Nova Scotia for fear of the consequences of what she had done. I wrote to Nova Scotia to one or two of the men who had been in the school at the same time I was, and they reported her arrival there and the fact that several women had been infected by her before the disease was recognized. That merely adds one more to the cases to which Dr. White has alluded.

Now it seems to me the most important question at the present time is in regard to the establishment of syphilitic hospitals, or, at least, wards in the general hospitals. As Dr. White has shown us, leprosy has diminished markedly simply by segregation. If segregation can work that effect in the case of leprosy, how much more would it produce it in the case of syphilis, where the lesions are very numerous, often masked and so neglected by the possessors of them. It

²¹ New York Medical Record, July 25, 1891.²² American Journal of the Medical Sciences, October, 1891.¹ See page 105 of the Journal.

is a disease which is being daily disseminated through the community. I recently saw a case from kissing, where there was no reason to doubt the man had done anything else than to kiss. I saw a case two or three days ago on the finger, and if one chooses to look back through one's books there is no end of such instances. It makes no difference what part of the body is exposed; where there is a possibility of the entrance of the virus, there the virus, if allowed to stay long enough, is going to enter with all its lamentable consequences. Under all these conditions, with the fact patent that the disease is so easily communicable, is communicated to innocent wives and children, and knowing that the spread of syphilis must have already attained a very great degree in extent, if we are ever going to try to stop it, it seems to me we ought to begin in the most thorough way, and to try to have wards established in the general hospitals. I think there is nothing more important for the whole profession at the present time than to try to get such hospitals or wards established.

DR. AUSTIN PETERS: I suppose, as a veterinary surgeon, the diseases transmissible from animals to man are those which particularly interest us. The reader mentions ringworm, glanders, anthrax, actinomycosis and tuberculosis. Two diseases transmissible, one from animals to man, and the other possibly transmitted in making post-mortems, not mentioned, are rabies and tetanus. The ringworm I think he did not mention so much as being transmissible from animals to man. I know a woman who a year ago had a cat which had ringworm and transmitted it to its offspring. That lady gave the kittens away and every person who had one of these kittens had ringworm appear in one or more of the family.

As regards glanders, we have more or less in Massachusetts. I suppose I see two or three glandered horses a year, and, of course, it is a very dangerous disease. I always make a practice of carrying a lot of corrosive sublimate tablets and wash my hands in a solution of 1 to 100 as soon as I am through examining one of these horses. Anthrax, I think, is very rare among cattle in Massachusetts. I have never seen a case. The only case of anthrax I ever saw was with Dr. Ernst at the Massachusetts General Hospital. We saw a man with malignant pustule. I think the man worked in a tannery and carried hides on his shoulders, and his neck had been scraped with the edge of a hide and in that way he became inoculated. His neck and shoulder and left arm were tremendously swollen.

Rabies among dogs has been very prevalent the last year and a half or two years, but in many of the cases the dogs do not have a propensity to bite. Only a small per cent. of them have the violent form. Most of them have dumb rabies, become paralyzed, and die without doing harm; and consequently little attention is paid to them. Last summer I saw a man who had been bitten by a dog that had rabies. I asked Dr. Ernst's advice as to whether the man had better be induced to go to the Pasteur Institute in New York. Dr. Ernst advised it, and the man went. This was last July; the man is alive and well. Another case was where a small child was bitten by an old dog whose teeth were very dull and did not break the skin. Dr. Ernst was consulted about the case, but thought, as the skin was not broken, that there was no danger to the child. That was a year ago last summer, and the child is well to-day.

In reference to tetanus. A few years ago a young veterinary surgeon made a post-mortem on a horse that died of tetanus in Needham; he himself died of tetanus soon after, and the daily papers at that time said he inoculated himself by making a post-mortem on a horse that died of this disease. At that time tetanus was not recognized as a disease due to a bacillus, and the newspaper story was laughed at; but present knowledge would seem to indicate that it was possible.

Actinomycosis we see occasionally, but I do not think it is particularly transmissible from animals to man. It is very common in the West, particularly in Illinois.

Tuberculosis is of more interest to us all, because we see so many cases among dairy cattle, and because cows with general tuberculosis or tuberculosis of the udder can undoubtedly give the bacillus in the milk, and in that way they might infect a susceptible person or a child who is drinking a good deal of milk.

DR. H. C. ERNST: There is one point I should like to emphasize in carrying out Dr. White's suggestion in regard to prophylaxis. He has spoken of the care the physician should exercise in washing his hands after each examination. I should like to add the caution that, so far as I know, is very little attended to, and that is that the physician should never use the same towel twice. I think there should be a very large supply of small towels, that they should never be used but once and then be thrown away and thoroughly steamed before being again employed.

The whole question is of great interest, and I think the fear of transmission of disease to the physician is perhaps more emphasized to one engaged in work like that done at my laboratory. It appears to me work of that kind gives one a certain sense of security because, I think, one realizes the best methods to handle it. From a general point of view it seems to me that Dr. White has emphasized those points very perfectly indeed.

DR. ALEXANDER BURR: Holding the position of inspector at the Brighton abattoir, I have seen the dangers to which many of the butchers were exposed. I think the general practitioner who is located away from the abattoir has the impression that most of the butchers have nothing but healthy animals to deal with, whereas one who has seen what they are at times called upon to dress, is surprised that there are not more cases of fatal nature due to dressing of the animals. Of the animals that come to the Watertown stock-yard, some arrive dead and some almost ready to die. Those that are dead are carted down to the dead-house, and those with any semblance of life left are generally carted to the slaughter-house to be dressed, and such as seem likely to die before the wagon reaches there, are generally shot and bled, and allowed to remain until the wagon arrives. There are, it seems to me, a great variety of infectious diseases which these men are called upon to handle.

In the case of anthrax, one of the most virulent of bovine diseases, during 1890 we had nine cases, five of which arrived there dead, and four which arrived at the yards showing symptoms of the disease. The first five were sent at once to the dead-house, and we made inoculation experiments from the blood of one of these animals upon two guinea-pigs, which died within two days. I remember going into the slaughterhouse after one of the other four was drawn in, and

when they get to the point where they hang the animal up preparatory to taking off the hide and withdrawing the intestines and abdominal organs, I was struck with the peculiar discoloration of the omentum. Upon looking at the spleen I found that that was considerably enlarged and of a black, soft, tarry nature. I was rather suspicious of anthrax at the time, and ordered the animal thrown away, the floors washed, and instructed the men to at once wash themselves. This seemed rather surprising to them as they had not been accustomed to wash themselves after such a case. This will probably recall to you the case of anthrax that occurred some years ago and proved fatal. They dressed one of these animals that was brought in the wagon, and, as was their habit after washing an animal down, they run a cloth across the neck. This man had a scratch about the face. In the course of twenty-four hours he had considerable enlargement of that side of the face and glands, and showed symptoms of restlessness, vomiting, etc., and died in great agony at the end of four days.

Actinomycosis, I find, is quite a common disease there. I have seen thus far this year ninety-nine cases of it. I have never seen any ill effects from the dressing of such animals.

At the Massachusetts Veterinary College there have been one or two outbreaks of variola equina, and in each case the students have had more or less symptoms of it in the hands from the handling of the animals. One common trouble at the abattoir is from rupture of the intestines and bladder, setting up peritonitis. It is surprising how these men will handle these animals. They seem to think there is no danger whatever.

DR. ARNER POST: There is only one thing I wish to say and that is in regard to one of the dangers from syphilis. Physicians, as a rule, have some idea of the precautions to be taken in handling a case of syphilis which they recognize as syphilis, but a good many of the inoculations among physicians occur from cases which are not recognized. They are cases either in persons whom the doctor feels sure cannot have syphilis, or still more likely in cases of syphilis of non-venerous origin. It is not safe at the present day, when syphilis is so widespread, to suppose that any person cannot have syphilis, or that any class of patients is exempt from the disease. The number of cases of accidental or non-venerous syphilis is increasing very largely, it seems to me, at least I see very many more such cases, and Dr. Wigglesworth speaks of the number of cases that have accumulated on his books. I have seen in the last fortnight at least six cases in which the syphilis was non-venerous in character. The danger from these cases is greater before the diagnosis is made. I recall very distinctly one case in which a physician inoculated himself in caring for a poor woman who had been accidentally inoculated. Her primary sore presented a curious question of diagnosis for a little while, and this physician seemed to have no idea that there could possibly be anything from which he could be injured, until the mischief was done.

Physicians ought to regard with suspicion any sore on themselves which is chronic and which fails to heal and which they do not understand. They ought to be equally suspicious of simple sores on their patients, and ought to be careful of bringing their fingers in contact with such sores.

Dr. White's caution that the physician should wash

his hands after the patient visits him, even if he has not handled him, is a good one, I think. Many of these persons take pains to handle things within their reach, for instance, the doctor's books and chattels. It is a matter of surprise to me that physicians are not inoculated more frequently than they are.

DR. J. T. BOWEN: I have not had much experience with infection among professional men, but I should like to add my testimony as to the large number of extragenital chancrea that are found in syphilis. During the last three weeks I have seen three cases of extragenital chancrea in my office, and in two of them I feel quite certain the disease was acquired innocently. One of these patients was a trained nurse.

The only other point I had in mind which perhaps is not so directly connected with the subject as it might be, is as to scabies. It seems to me we cannot insist too much upon the importance of the recognition of scabies. I feel sure there is no other important skin disease in which physicians fail in a larger proportion of the cases to recognize the nature of the trouble. I have seen many cases of scabies treated by half-a-dozen different men without suspicion of the cause, where the diagnosis was not a hard one to one who had seen several cases.

DR. W. C. B. FIFIELD: A case was published in a recent number of the London *Lancet*, of anthrax treated by ipecac, and if the case as given in the London *Lancet* can be followed by others, it would seem we have reduced the treatment of malignant pustule to a very simple matter indeed. I notice that in one of the London hospitals, I think Guy's, a horse slaughterer was admitted to the wards with malignant pustule somewhere near the eyelid. Relying on statements made by some scientists that ipecac was fatal to the bacillus of malignant pustule, the surgeon cut away a part of this malignant pustule then carefully sprinkled it with powdered ipecac, and continued so to sprinkle it, and together with this he administered every two or three hours to the patient, powdered ipecac guarded by a little morphia, and the result proved entirely successful. I say if this can be followed up by others, it is certainly a wonderful advance over anything we have known as to the treatment of malignant pustule, it being almost always, I think, fatal.

In regard to the non-recognition of scabies by practitioners, I confess that I think I have seen a good deal of skin disease in the course of my life, and I do not feel quite as sure as I did a good many years ago in my diagnosis. When I was at the St. Louis Hospital I used to be appointed to keep the bell-rope over my shoulder for the admittance of patients, and at that time I was very apt, indeed, to make a diagnosis by finding the burrow of the scabies insect. In those days we used to mark them out with ink, but cases that have come before me in this country do not present the burrow as often as those did, and I cannot find anything to ink. The scabies I see here seems to me somewhat different from what I saw in Paris years and years ago.

DR. J. C. WARREN: I think surgeons feel the importance more now of precautions against contagion than they used to five or ten years ago. I think the younger men show great care in dealing with contagious disease. The precautions are greater with each successive year now that we understand what contagion really means in disease, and now that many of the younger practitioners have had training in the

bacteriological laboratory. Nevertheless, I find it requires all the circumspection which I possess to avoid contagion. I was one of those surgeons Dr. White alluded to as having contracted surgical tuberculosis. The diagnosis was not established microscopically, yet I had a little spot of anatomical tubercle on the dorsum of the thumb for some eight months, which I suppose was contracted from a case of tuberculosis of the hip-joint where I performed amputation and afterwards trephining of the acetabulum, and where probably I scraped the thumb with diseased bone, though at that time I was not conscious of having contracted any trauma at that spot.

I also felt somewhat disturbed last winter after dealing with a case of hydrophobia. A case entered the hospital and it was decided to try the treatment by very active bleeding, and blood was drawn from the radial artery one evening and from the vein the next day. I had one or two scratches on my fingers of the other hand and although I took precautions to cover them with collodion before the operation, there was one finger where the scratches were exposed, and blood trickled over that spot during fifteen or twenty minutes while the operation was going on. Some of the blood was taken to the bacteriological laboratory and inoculated into animals, with negative results, which was a comforting reassurance to me, and the statement was made in the laboratory that during the preparation of the cords of animals dead of hydrophobia, some of the broth thus prepared was occasionally smeared accidentally in the scratches of hands and with ordinary precautions no evil results had followed.

I should like to ask Dr. Jackson a question about a culture of tetanus bacilli which he had in his laboratory, and which he was inclined to think was dangerous if exposed by breaking of the tube. I would like to ask whether any experience in the laboratory has shown that the tetanus bacillus is more virulent when in the state of active culture than when in its ordinary state, as in dust.

DR. HENRY JACKSON: I don't know as that question can be answered to-day. Mice and guinea-pigs died very rapidly when injected with the bacillus of which Dr. Warren speaks, but they may also be very easily killed by injections under the skin of ordinary garden earth and of manure. It seems to me that human beings cannot be as susceptible to the disease tetanus as are these lower animals, since if such were the case tetanus would be infinitely more common than it is. Slight abrasions of the skin constantly come in contact with garden earth, not only in gardeners and people of that kind, but in people of every class and degree. I should feel that the culture ought to be kept very carefully as we do not know whether it has increased virulent power when grown on a suitable medium. Such a condition does occur in other forms of bacteria, as for instance, the tubercle bacillus. That bacillus when grown in favorable media is much more virulent than when grown in unfavorable media. Also anthrax; so it is perfectly possible that the tetanus bacillus may just be able to exist in the garden soil, and retain its vitality, but become much more virulent when grown in a medium which is suitable for its development.

DR. WARREN: The reason I asked was, that I felt great responsibility in passing around the test-tube to the class.

DR. RICHARDSON: There is one source of disease in hospital wards in the summer-time which is never considered; I refer to the danger of infection by flies. It is very difficult, if not impossible, to keep flies out. Whenever a wound is exposed, especially if it is a foul one, two or three flies will at once alight upon it. It seems to me quite as reasonable that insects should carry the germs of disease from patient to patient as pollen from flower to flower. The remedy—screens—is very expensive and quite ineffectual.

In the Massachusetts General Hospital great care is taken that there shall be plenty of towels, and no surgeon there ever uses a towel a second time. Five thousand go through the laundry every week.

There is little if any danger of hand infection to-day in the dissecting-room. It is extremely rare to see any trouble of this sort in the anatomical department. I think this is because the subjects are better disinfected than formerly. I have repeatedly wounded myself in the past seventeen years without subsequent harm. We should avoid touching a wound with the fingers as strictly as possible in all surgical operations, unless the sense of touch is for some reason indispensable. I have carried out this principle for two years, and have avoided danger of infection both to the patient and to myself.

DR. S. H. DURGIN: I think this matter of disinfection is a most important one, and Dr. Ernst's remarks call to my mind the fact that disinfection with the bichloride of mercury, and in fact with all of the disinfectants in solution is performed, as a rule, with great haste. The fact is oftentimes forgotten that it requires time in contact with a disinfectant in order for disinfection to occur. I think there is a very common impression that the mere touch of a disinfectant or a few moments' contact with infected material is sufficient to do its work, which is far from being true. Even the strongest disinfectants require time to do their work. An infection of the hand may be washed away with running water and soap and the hand be made fairly clean, but the use of an ordinary towel or of a disinfecting liquid in a basin for a few moments only, does not fulfil the conditions which experiments have shown to be necessary.

I want to correct an impression which Dr. Burr unintentionally gave when he alluded to the dressing of diseased meat at the abattoir.

The handling of all diseased animals and meat is provided for in the basement of the building and none but healthy animals are allowed to be slaughtered on the main floor. If disease in the animal escapes detection by the inspector and is found on dressing, on the main floor, the meat is at once removed to the rendering tanks in another building and the floors are immediately cleaned, so that no fear need be entertained as to any injury being done to the wholesome meats.

The regulations of the Board of Health cover the entire conduct of the abattoir and their enforcement is entrusted to Dr. Burr whose care and efficiency are undoubtedly. For the last two years diseased and unwholesome meats have been detected and condemned at the abattoir to an extent which was not possible under the former unskillful inspection.

DR. O. K. NEWELL: There is a law in this State which admits of the detention of a syphilitic case in the hospitals of public institutions. A syphilitic coming there may be detained for such time as is necessary to

make it safe to liberate him, although there are no special wards as yet for the treatment of this disease.

DR. WHITE: On the very last day of the last session of the Legislature, the committee to which this matter was entrusted, were enabled to push the matter through, so that the measures which our committee advocated, were essentially adopted.

Dr. Fifield has alluded to not finding the burrows in all cases. If he found them in one out of five or six cases, he would, I think, find them in as large a percentage as they occur. We do not expect to make a diagnosis of scabies by burrows alone, and it is only in the small proportion of cases I mention that they are found, that is, burrows so distinct that they can be recognized beyond question.

DR. H. L. BURRELL read a paper entitled

WHAT IS A FELON?²

DR. W. C. B. FIFIELD: A fair-sized volume might be filled with the anatomy, pathology, diagnosis and the treatment of what is called felon, sometimes known under the name of whitlow. The English surgical literature has contributed nothing, I may say, to the knowledge of this subject. Dr. Burrell would like to see the word felon abolished. I am afraid he can't. It is too firmly fixed.

To gain any knowledge of felon one must go to the French authorities who have occupied themselves with the subject for a good many years, and each one as he succeeds another has divided it into more and more classes, until the later surgical pathologists and anatomists have brought it down to three divisions. Dr. Burrell employs terms which are not familiar to me. The French surgeon, Bauchet, divides his cases into the superficial, subcutaneous and deep. By the superficial he would be understood to mean that which we know under the name of run-round. The commonest division that the French begin by is the subcutaneous, in French parlance, *bouton de chemise*, because the skin and the cellular tissue is elevated so that when the epidermis is raised by the purulent effusion, one finds a little hole beneath and leading down into the cellular tissue below the skin, through which pus escapes. The term abscess is very good, because we have the rounded place upon the top of the finger leading into an enlargement beyond. The real tendinous felon, such as Dr. Burrell has described, and to which he gives the name thecitis, is scarcely known to their pathology. Where pus exists in the sheath of the tendon, as it often does, it exists only in the two first phalanges of certain fingers. When pus exists at the terminal phalanges, the last phalanges, then it is necessarily periosteal, or inflammation of the bone, because the channel in which the tendon runs does not extend to the last phalanx. To that one must find exceptions, and the exceptions are these: in the little finger the tendon runs with the sheath to its very end; in the thumb the tendon runs with its sheath to the very end. This would follow, that, given a periosteal inflammation in the fore, middle and ring fingers, one is pretty sure that that does not follow the course of the tendon down into the palm of the hand. In fact, one never sees palmar inflammation follow disease of the terminal phalanges of the three first fingers, but let that disease attack the terminal phalanx of the little finger, and one occasionally sees the inflammation run, not only along the

tendon into the palm of the hand, but crossing over extend up the tendon of the thumb to its very end, and vice versa, an inflammation commencing at the terminal phalanx of the thumb may end with inflammation of the terminal phalanx of the little finger. That is a point to remember with regard to felon.

There is another form to which the term of felon is applied, to which the French give the term of the carbuncular inflammation. That, I think, nothing is known about here, hardly. I don't think surgeons recognize it when they see it. This occupies the back of the hand, along the hairy surface of the fingers, but it also occurs on the palmar side of the phalanges, where persons have been pricked with bones, a large poisoned wound which oftentimes takes on much the appearance of the periosteal inflammation, and one would be much tempted to give the wrong prognosis.

There is another kind of felon where the inflammation occurs, that is, beneath the pad at the root of the fingers. When the inflammation occurs there one expects in vain that pus is going to come out this way through this part of the hand. It comes through the web of the fingers, and although a person may see this opening within the web of the fingers, yet if he seeks the true source of the pus he finds it beneath these finger-pads, where corns are often formed, called *durillons forcés* in French.

In regard to the treatment of the periosteal form, I taught the students at the City Hospital the importance of making quick incisions, and tearing out at once the phalanx from its bed, not waiting for it to be cast off. Of course, this refers to the last phalanges. In regard to the inflammations of the palm of the hand, which sometimes follow the inflammations of the phalanges of the thumb and little finger, a very good thing used to be taught by French anatomists in my day, and that was in regard to what they call the M majuscule of the palm of the hand, and that is a good guide for operation, knowing as we do where the vessels run in the fingers: at the side one may safely carry the knife as deeply as he pleases, if he does not trespass beyond the first line of the capital M. Beyond that line he will get hemorrhage if he makes a deep incision.

There is a subject never taught here, I believe, by anatomists, and that is the palmar synovial pad, or sac, which resembles an hour-glass. By a careful dissection of the palm of the hand, getting off the palmar fascia and introducing the blow-pipe, you can inflate the whole of this pad so as to see that it extends beyond the annular ligament, and it is within this that pus forms in these destructive inflammations.

Specimen shown of finger removed from a patient with periostitis of the middle phalanx of the finger.

DR. J. C. WARREN: The etiology of these deep-seated inflammations about the bone and periosteum is an interesting one. The inflammation may be started in two ways. One is due to the bruising of the parts which disturbs the nutrition and renders it a soil favorable for the growth of the micro-organism which perhaps may be circulating in the system, that is, we may have an intravascular infection. My idea is that many of the inflammations known as felon occur without direct inoculation, but from within and through the agency of a trauma which interferes temporarily with the nutrition of the part.

Then again, the clinical history of this inflammation may possibly be known by the nature of the organism

² See page 108 of the Journal.

which plays a part; for instance, if we have the staphylococcus inflammation, we may have a localized abscess; if the inoculation of the streptococcus, we have the more rapid forms of spreading inflammation; therefore it may be due not merely to the anatomical nature of the part, but to the character of the virus which causes the spreading.

As to the locality, I should be inclined to regard the deep-seated inflammation, the true felon, as a periostitis in the majority of cases. It may possibly be in some of the cases an osteomyelitis, an inflammation starting from the interior of the bone itself.

In regard to the inflammations of the tendon, I should be inclined to regard them as more frequently secondary, as routes through which the suppuration may extend rather than as points of origin of the original inflammation.

In hearing what Dr. Burrell said about the treatment it occurred to me that a form of application which I use a good deal is, perhaps, as convenient and effective, and more comfortable than the hot poultice he recommended in the majority of cases, and that is carbolic acid in oil as a vehicle, in different strengths. It has a very soothing effect upon inflammation in this region, and it seems to exercise an antiseptic action. Many of the more superficial types of dermatitis or cellulitis, localized superficial inflammation, may be arrested by the application of a dressing with carbonized oil, 1 to 60 being sufficient for that purpose; and even after operations have been performed the dressing is a light one and pretty efficient. I have seen it stated that aqueous solutions of carbolic acid are dangerous to apply to the finger, the danger being that gangrene may follow. I never saw anything of the kind. I don't think pretty strong solutions of carbolic acid in oil are likely to do that.

DR. G. W. GAY: Dr. Burrell's very careful, clear and concise paper shows that he has had long and useful experience in the out-patient department. There is where one sees felons in all stages and varieties. It seems to me his division is a practical one, and after a person has worked awhile among them he will be able to recognize and classify them under one of these divisions. I have come to regard felons as capital cases of surgery rather than minor cases. In fact, I have come to tell the students that there is no minor surgery nowadays, so much is expected of surgeons. I think as much judgment can be shown in the treatment of felon as in almost anything, so as to get the patient well quickly and without deformity. I think in the majority of cases the patient should have ether. The pus should be found, if any there be.

It should be thoroughly evacuated and the wound treated with just as careful antisepsis as one would treat an amputation or laparotomy. I have seen many a case heal up with one dressing when treated in that way, and that is far better than the old way of poulticing and parboiling and the nasty, disagreeable fingers seen in old times.

In regard to the dressing with carbolic acid of which Dr. Warren speaks, I have seen a few cases. I think there was a lawsuit a few years ago in an adjoining town, where a finger was treated by being put in a watery solution of carbolic acid. This very day a patient came to my office with the skin of the two last phalanges of the forefinger entirely denuded by having been treated by a cloth wet in carbolic acid. The carbolic oil we have used at the hospital with a good

deal of satisfaction. I think, as a rule, a thorough, careful, antiseptic treatment, with incision, is the best way to manage the severe cases.

DR. F. B. HARRINGTON: I have been very much interested in this classification of Dr. Burrell's, and I think it is a good one. I have come, after seeing these cases daily in out-patient work, to feel that felons were merely septic wounds of the fingers. They are recorded as "septic wounds of the finger involving the bone," "the periosteum" or whatever part seemed to be most affected. I think, as Dr. Burrell has said, that these conditions very often run into each other. One can by seeking usually find the opening through which septic material has been introduced. If that is not possible, it is very easy to conceive of some minute opening being made through which septic material has passed.

The subject of destruction of tissues by the use of solutions of carbolic acid is one of great interest and importance. I have photographs of two cases in which fingers have been lost by the application of aqueous solutions of carbolic acid. This destruction of the tissues, carbolic necrosis, seems to take place most commonly where there is an incision or an abrasion of the skin.

It has seemed probable to me that the evaporation of the water had left the carbolic acid in considerable strength, and that its absorption into the tissues had caused the destruction.

DR. NEWELL: It would seem to me that if the title of Dr. Burrell's paper is to be answered in any way to apply to what is a felon, it must be that either a felon is some single thing or it is not. I had always supposed surgeons understood by felon that condition which occurs when we have tenderness arising without any external or superficial indications of disease. Tenderness over the anterior surface of the distal phalanx of one of the fingers, followed by acute pain on pressure and by the subsequent well-known symptoms, being a deep-seated suppuration. Any other affections of the finger which seem to be in consequence of skin manifestations of some sort are primarily of superficial origin and cutaneous diseases. I have always described as felon the above-mentioned deep-seated suppuration, which I think never can be anything but accidental, because although bruises are constantly occurring over the distal phalanges in manifold occupations, yet this deep tenderness, followed by extreme pain, tenderness and suppuration, is comparatively rare.

DR. RICHARDSON: Nothing interests the anatomist more than the surgery of the hand. I think the first two classifications—the peronychias and simple inflammations of the skin—should never be confused with the more serious forms; but it seems to me very difficult to distinguish periosteal from thecal inflammations. I have taught for many years that the proper way to treat such deep-seated inflammations, whether thecal or periosteal, was by careful dissections under complete anaesthesia until the pus is reached. I think this is the only safe method. By following a fixed rule always to cut deeply we invariably open the tendon sheath. This is not only unnecessary in many cases but absolutely unsafe and indefensible, for the reason that we often infect an otherwise healthy part by indiscriminate incisions. Yet if we must lay down a rule, I have no doubt that, on the whole, we should do better to follow that of long and deep cuts. Such a rule, amended as follows, would, I think, be safe to

adopt in all cases of deep inflammation in the palm or fingers, namely : A long incision should be made, under complete anesthesia, by careful dissection, until the source of the pus is found.

In regard to the point raised by Dr. Fifield as to the anatomy of the hand, I would say that these points were taught to me long ago by Dr. Porter. I have repeatedly shown the communication between the tental sheath of the flexor tendon of the little finger and the palm of the hand and also that between the thumb and wrist, through the sheath of the flexor longus pollicis. Dr. Mixer has made some very beautiful preparations to show this anatomical peculiarity. I have repeatedly observed the clinical confirmation of these anatomical tracts, not only by the extension of inflammation from the little finger into the palm of the hand and up to the wrist, but even extension into the terminal phalanx of the thumb. The reverse of this I have seen also ; where the sheath of the flexor longus pollicis becomes infected, the inflammation extends to the wrist, breaks into the bursa of the common flexors, and appears not only in the palm of the hand but even in the tip of the little finger. I think most surgeons to-day are familiar with and apply these anatomical facts to the surgery of palmar inflammation.

DR. H. W. CUSHING : The paper has been a very interesting one to me, since I have found this classification or a similar one very satisfactory for clinical work, especially for deciding what course of treatment is indicated in each special case. The main part of the paper I understand is in reference to this classification, and I wish to add my testimony as to its value. It is important, as Dr. Burrell and later Dr. Richardson have emphasized, in regard to treatment by incision. It is often a very unsatisfactory and unscientific method to indiscriminately treat these cases by a deep incision which extends to the osseous structure. I meet yearly in my hospital-work assistants who seem to consider such treatment the only proper method and see patients who have to their detriment, been so treated. If only one rule can be given, perhaps, all things considered, such a one would be the safest, since the most dangerous cases would be properly treated; but the indiscriminate deep incision is not a satisfactory method. An accurate diagnosis of the seat of the inflammatory process and a careful dissection give more satisfactory results.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

(Concluded from No. 4, page 97.)

FOURTH Annual Meeting, held in Richmond, Va., November 10, 11 and 12, 1891.

THIRD DAY.—MORNING SESSION.

DR. JAMES A. GOGGANS, of Alexander City, Ala., read a paper on

ABDOMINAL SECTION IN A CASE OF CYST OF THE MESENTERY.

He stated that he had been induced to write a paper on the case from the fact that cysts of the mesentery are extremely rare, and that operations for their removal are most generally fatal. He said that he had been able to find the record of one case of cyst of the mesentery removed by enucleation, by Guyon. The patient died on the seventh day after the operation.

One case operated upon by Sir Spencer Wells, the operator in that case incised and drained the cyst, but the patient died within a few weeks. Three cases operated upon by Pean, only one of which recovered. One case operated upon by Watts, but that he did not know the result in the case. One case operated upon by Cortes, who incised and drained the cyst, but the patient died from septicemia and hemorrhage. One case operated upon by Bantock, who removed the cyst by enucleation, and the patient recovered. The conclusion arrived at as to the origin of the cyst in that case, both by Dr. Bantock and the pathologist who examined the specimen, was that it originated from some foetal structure, possibly some of the rudiments of the permanent kidney. He said that Dr. Greig Smith says, that he knows of two cases of mesenteric cyst removed by operation by his friend, but that he could not relate them to him as they had not yet been published. He said that the patient upon whom he had operated for a cyst of the mesentery was a young woman, twenty-one years of age, daughter of a physician of Columbus, Ga. She had not been well for two years, but did not know that her abdomen was becoming larger until three months before the operation. During those three months she had been treated for abdominal dropsy, and had suffered much uneasiness and pain in the abdomen, and at the time of the operation her pulse was 120, and temperature 100° Fahr. The cyst was quite large, occupied mostly the left side of the abdomen, extended from under the ribs into the left lumbar region, dipped downward into the pelvis, and extended three or four inches beyond the median line of the abdomen into the right side. He said that he first removed about a quart of the fluid by aspiration, on February 7, 1891. The fluid was thin and of a dark color, and contained albumin, phosphates and chlorides. The patient was not benefited by the operation, and the abdominal section for the removal of the cyst was made on February 24, 1891.

The cyst was removed with omentum and mesentery, and loops of small intestine were embedded in its walls. An attempt was made to enucleate it, but hemorrhage was so free that the idea of enucleation was soon abandoned. A point as remote as possible from blood-vessels and intestines was selected, the cyst incised and drained. More than one gallon of a thin dark-colored fluid was evacuated, the sac irrigated with hot water, the lips of the incised sac stitched to the upper angle of the abdominal incision and a glass drainage-tube introduced to the bottom of the cyst. The abdominal incision was then closed with silk-worm gut sutures. The author was confident that the cyst was retro-peritoneal. The time consumed in the operation was twenty-five minutes. The sac was irrigated three or four times in twenty-four hours, and the drainage-tube gradually withdrawn. The patient suffered much from nausea and vomiting, which he attributed to the close connection between the walls of the sac and the loops of small intestines. The patient made a good recovery within thirty days. He presented a picture of the patient which was taken the 1st of November, 1891, which showed her to be in perfect health.

THINNESS OF UTERINE WALLS SIMULATING EXTRACERUTINE PREGNANCY, WITH REPORT OF TWO CASES,

was the title of a paper by DR. GEO. J. ENGELMANN, of St. Louis, Mo.

The author said there are many difficulties in the way of a positive diagnosis of early pregnancy, even in cases surrounded by conditions less unusual, but they assume alarming proportions when aggravated by the curious complications which may arise in individual cases, and above all when conditions are simulated in which delay is dangerous and operative interference seems called for, when a decision is urgently demanded, a decision upon which a life, and perhaps two, may depend. Whilst the auditor may criticize at his leisure and readily differentiate the conditions depicted, it is only he who is to pronounce and to act who can realize the difficulties of this entangling and so knotty problem.

CASE I. Patient, thirty-two years of age, had borne three children in the six and a half years of her married life, the youngest twenty months ago, which she was still nursing; and the menstrual flow has not as yet reappeared since the birth of this child. The patient came to his clinic for relief from a variety of discomforts from which she had been suffering more or less for the past three months. She complains of sick headache, vomiting spells, fulness of the stomach, belching after meals and an intermittent swelling of the abdomen; a pain in the groin appearing before such swelling, and a small tumor above the right groin, which she had first noticed three weeks ago, and, as she stated, then suddenly made its appearance. An examination revealed large varicose veins over the lower limbs; a solid, round, movable tumor above symphysis and right groin; the cervix low and large; the uterine body thickened lying low in the pelvis, with a certain mobility independent of the superimposed tumor; an applicator entering three and a half inches slightly ante. Notwithstanding the wine color of the pronounced cystocele and the cervix, pregnancy seemed out of the question, and the tumor was diagnosed as most probably a dermoid of the right ovary, hardly one connected with the uterine wall. In the course of an examination two weeks later, a very different condition of affairs was revealed. The tumor had disappeared, and a fetus was found in the utero-vesical space, freely movable, apparently floating about, the small parts being distinctly felt as if underneath a wet towel both through the vagina and abdominal walls. So distinct did the small parts appear to the examining finger, that it seemed impossible to realize that even as much as a thickness of the vaginal tissues should intervene, and the abdominal walls must certainly have been very much attenuated to disclose the fetal parts with such distinctness. Probe showed the uterine cavity free six and a half inches in length, still slightly ante, but never curving forward in the direction of the previous tumor.

The treatment for the supposed subinvolution was discontinued, the patient warned to keep quiet and to notify Dr. Engelmann upon the occurrence of any abnormal symptoms. He believed the case to be one of ectopic gestation, either within the broad ligament or in the abdominal cavity after tubal rupture, marked by the sudden appearance of the tumor five weeks ago, yet he was not sufficiently positive to warrant the immediate resort to the knife, and well that he did not do so, as persistent treatment and repeated examinations resulted in labor pains and the delivery of a five months fetus in the most correct and natural manner.

DR. ROBERT T. MORRIS, of New York, contributed a paper on

THE REMOVAL OF NECROTIC AND CARIOUS BONE WITH HYDROCHLORIC ACID AND PEPSIN.

The author said that it was sometimes desirable to remove dead bone without subjecting a weak patient to a dangerous or deforming operation. Attempts have been made, with some success, at clearing out this bone by a process of decalcification; but there are two chief reasons why failures have resulted, as a rule. In the first place, it was discovered that superficial layers of dead bone were decalcified easily enough, but the acids did not reach deeply through the mass, especially if portions were infiltrated with caseous or fatty débris. In the second place, cellulitis was pretty apt to develop during the course of treatment.

After much experimentation he had finally adopted a method of work which seemed to be complete. An opening is made through soft parts by the most direct route to the seat of dead bone, and if sinuses are present they are all led into the one large sinus, if possible. The large direct sinus is kept open with antiseptic gauze, and the wound allowed to remain quiet until granulations have formed. Granulation tissue contains no lymphatics, and absorption of septic material through it is so slow that we have very good protection against cellulitis. The next step consists in injecting into the sinus a two or three per cent. solution of hydrochloric acid in distilled water. If the patient is confined to bed, the injections can be made at intervals of two hours during the day; but if it is best to keep the patient up and about, the acid solution is thrown into the sinus only at bedtime. In either case the patient is to assume a position favorable for the retention of the fluid. Decalcification of exposed layers of dead bone takes place quickly, and then comes the necessity for another and very important step in the process. At intervals of about two days an acidulated pepsin solution is thrown into the sinus¹ and this will digest out decalcified bone and caseous and fatty débris in about two hours, leaving clean dead bone exposed for a repetition of the procedure. The treatment is continued until the sinus closes from the bottom, showing that the dead bone is all out.

Even in distinctly tuberculous cases the sinuses will close²; apparatus for immobilizing diseased parts and tonic constitutional treatment are employed, as they should be, in conjunction with our efforts at removing the dead bone. If suppuration is free in any cavity in which we are at work, it is well to make a continual practice of washing out the cavity with peroxide of hydrogen before each injection.

It is a popular impression in the profession that living bone is not attacked by dilute mineral acids, but as it makes a good deal of difference whether the impression is correct or not, he experimented as follows: A portion of the keratinoid layer was removed from the carapace of a turtle (*nanemys guttata*), and the animal was then placed tail downward in a glass of five per cent. hydrochloric acid solution. In the glass he placed also a segment snipped from the plastron of the turtle, and a transverse segment from an old dry humerus of a man. The piece of humerus was completely decalcified in six hours; the segment from the plastron was soft in about twenty hours, and the carapace of living bone was decalcified at the exposed part in thirty hours. He was then curious to know what effect the acid had had upon the blood-vessels of the

¹ He uses distilled water, 3*iv*; hydrochloric acid, m. xvi; Fairchild's pepsin 3*ss*.

decalcified bone; and Dr. Smith of the laboratory of the Post-Graduate Medical School made for him several sections of the carapace, which included both decalcified and healthy bone. Investigation showed that all of the blood vessels were destroyed wherever the bone was softened, and the action of the acid had extended farther up along the larger blood-vessels than elsewhere.

The difference in time between decalcifications of the dead bone (six hours) and of living bone (thirty hours) is significant; a five per cent solution of the hydrochloric acid having been used. If we use a two or three per cent. solution of hydrochloric acid, a wall of lymph and of granulation tissue is thrown out upon the surface of the living bone for protection, and only dead bone is attacked. This at least has been his observation in several cases in which the results of treatment could be easily watched.

DR. LANDON CARTER GRAY, of New York, in a paper entitled

THE PRESENT STATUS OF CEREBRAL SURGERY, touched upon the modern aspect of intracranial surgery. The speaker first passed in review our present knowledge of localization of functions of the brain, stating that we were well acquainted with the functions of the motor area, of the third frontal convolution, the frontal lobe, the island of Reil, the two upper temporal convolutions, the cuneus, certain portions of the basal ganglia, the base of the brain and the cerebellum, and that we knew nothing of, or had still under discussion, the question of the localization of the centres for the sensations of touch, pain, muscular sense, temperature sense, most of the parietal lobe, and most of the temporo-sphenoidal lobe with the exception of the olfactory lobe. He stated that operations for fracture of the skull with or without haemorrhage, for abscesses, and for tumors that were removable and localizable were usually successful; those for so-called idiopathic epilepsy were utterly valueless, as were also those for epilepsy supposed to be due to genital or ovarian irritations, whilst those done for epilepsy due to removable and localizable lesions of the intracranial contents were usually successful so far as the lesion was concerned, although it was a grave question as to whether the epileptic habit was ever cured. The latest operation for idiocy supposed to be due to premature ossification of the fontanelles was still under discussion and consideration, the cases being too few and too recent to permit of any conclusion; whilst the operations for hydrocephalus and for epilepsy due to such early infantile and foetal lesions as parencephalus, haemorrhage and meningitis were indefensible. He further impressed upon surgeons the great difficulty that there often was in finding a subcortical lesion of the centrum ovale that was deep-seated or small; and the fact should be borne in mind that there might be no decussation of the motor fibres from the hemispheres, so that a lesion would be found upon the same side as the paralysis.

THIRD DAY — AFTERNOON SESSION.

DR. CHRISTOPHER TOMPKINS, of Richmond, Va., followed with a paper entitled

A CASE OF INDUCED ABORTION FOR RELIEF OF NAUSEA AND VOMITING, WITH REMARKS.

On August 1, 1885, he was called to see Mrs. J., aged twenty-four, and, as nearly as could be ascertained,

three and a half months pregnant with her first child. Patient was born in the mountainous part of Virginia; she had an active out-door life and grew up to be a woman of good height and of round full figure. January 14, 1884, she was married. While in the City of New Orleans, in stepping from the platform of a car, she sprained her ankle. This, although treated immediately by a physician of that place and subsequently in this city, caused her great suffering. Finally, refusing to yield to the usual treatment, the part was put in a plaster cast; she went about on crutches, and after many months recovered. In the mean time she became pregnant, and from the first was attacked with nausea and vomiting. Mild in the beginning, it gradually increased in gravity, till she sent for him on the 1st of August, 1885.

Her husband stated that she had had a fever for two weeks. Dr. Tompkins found her in bed, and learned that she had been there for days; her figure not robust, and her face thin and attenuated. What little she had eaten in the past ten days or two weeks had been apparently rejected, her temperature one degree above normal; tongue foul; sores on the teeth, and the breath of a sour and bilious odor. The pulse was fairly good, considering her condition. Even the mention of food was distressing to her, and the sound of the dinner bell, though far off from her, caused such distress, that its ringing was discontinued by the family. The bowels had throughout her pregnancy been constipated, only moving once in two or three days. Although continuously retching, very little or no blood had been seen in the material vomited, except on two occasions, and then not a great deal, and such as there was, was of a florid scarlet color. No medicine had been given and no treatment taken, except the occasional use of lime water, which she said "did no good."

The patient did not improve up to August 7th, when Dr. Tompkins, thinking the case one of the greatest gravity, and that the question of abortion could no longer be deferred, invited Drs. J. B. McCaw and Aaron Jeffery to meet him in the afternoon in consultation. All agreed that abortion must be produced, in order to give the patient a last chance for her life, which was done.

Remarks. — The case is reported principally because it was an unsuccessful one, and because he wished to disabuse the minds of those who are not experienced in such operations of the notion, commonly believed and often expressed, that the induction of abortion for the nausea and vomiting of pregnancy is in skilful hands an undertaking devoid of danger and necessarily attended by success. In this case, he is of the opinion that death was the result of the protracted debility and emaciated constitution, due to her long confinement and suffering, caused first by the injury to her ankle, from which she had not recovered when she became pregnant and was attacked by nausea and vomiting, this last continuing till her death. Under such circumstances the outlook was indeed very unfavorable, for to the shock of operation and depression incident to the use of chloroform, there was added fever and protracted prostration, both from injury to the ankle and from want of nutrition, the result of the long-existing nausea and vomiting. He had before and since operated on women for the nausea and vomiting of pregnancy and with success, whose apparent condition was much worse than that described in the above case, but without the history of a previous injury or disease.

The prognosis, always unfavorable, ought, when the case is so complicated, to be of the most guarded kind. The practitioner should not, however, hold his hands on this account, for the operation affords the poor sufferer the only opportunity of relief. The author uses metal dilators instead of tents, and completes the operation at one sitting. He is likewise convinced that the least possible chloroform used, the better the result.

The following officers were elected: President, Dr. McFadden Gaston, Atlanta, Ga.; First Vice-President, Dr. Cornelius Kollock, Cheraw, S. C.; Second Vice-President, Dr. Geo. Ben Johnson, Richmond, Va.; Secretary, Dr. W. E. H. Davis, Birmingham, Ala.

Place of next meeting, Louisville, Ky., second Tuesday in November, 1892. Chairman of Committee of Arrangements, Dr. L. S. McMurry, Louisville, Ky.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

STATED meeting held January 25, 1892.

DISCUSSION ON EPIDEMIC INFLUENZA.

DR. EDWARD G. JANEWAY opened with some remarks on the diagnostic features of the affection. An isolated case of it, he said, could not be put into the category of having fixed characteristics, but a number of cases taken together justified the diagnosis of epidemic influenza. Having spoken of the numerous phases assumed by the disease in different instances, he said that there was a tendency, in the presence of the epidemic, to class ordinary diseases under the head of influenza. Follicular tonsillitis, pneumonia and meningitis were some of the afflictions sometimes mistaken for it, and the early symptoms of small-pox might also be taken for those of influenza.

DR. R. W. WILCOX thought that epidemic influenza has certain marked characteristics which clearly distinguish it from other diseases. Among these he mentioned: (1) the suddenness of the attack; (2) the multiplicity of the symptoms; (3) the variability of the symptoms; (4) an amount of depression not at all proportionate to the physical trouble; and, (5) the progress of convalescence, which is more tardy than in other diseases of the same severity.

DR. WM. H. DRAPER spoke on the complications and sequelae of influenza, and stated that in his opinion most of the so-called complications were in reality manifestations of the disease.

DR. T. R. POOLEY, in speaking of the eye complications, said that it would take much less time to talk about the diseases of the eye which were not thought to occur in the grip, or as sequelae to it, than of those which had been mentioned in this category, and he expressed the opinion that influenza was held to blame for many diseases of the eye with which it had nothing whatever to do.

DR. O. D. POMEROY spoke of the ear complications, and DR. BEVERLEY ROBINSON described a curious aural condition he had met with, in which the patient could not hear words spoken in an ordinary tone, but could distinguish the ticking of a watch placed at some distance from the ear.

DR. H. D. CHAPIN, who spoke on influenza in children, coincided in the opinion generally held that they are less subject to the disease than adults. He called attention also to the necessity of caution in

diagnosing as influenza diseases entirely distinct from it, and referred to an instance in which a whole family of children had been exposed for several days to measles, because a case of that disease was declared to be influenza.

DR. LANDON CARTER GRAY spoke of the nervous phenomena of the disease, and DR. FRANCIS DELAFIELD, of the treatment. Dr. Delafield thought there was no treatment to prevent it, and none to affect its course, any more than there was in other infectious diseases. The chief things were that the patient should be kept in bed and properly nursed. There were, however, the frequent complications which called for interference. For the headache and neuralgic pains phenacetin was most relied upon. The bronchial affections should be treated in the ordinary way, and when there was a tendency to congestion of the lungs, it was advisable to work on the circulation, giving small and frequent doses of digitalis or aconite, with or without strichnina, and perhaps alcoholic stimulants.

Recent Literature.

Age of the Domestic Animals: Being a Complete Treatise on the Dentition of the Horse, Ox, Sheep, Hog and Dog, and on the Various other Means of Determining the Age of These Animals. By RUSH SHIPPEN HUIDEKOPER, M.D. Two hundred engravings. Philadelphia and London. 1891.

Dr. Huidekoper's reputation is *prima facie* evidence of the value of this book. As would naturally be expected, the greater part of it is devoted to the dentition of the horse. The various conditions of the teeth are illustrated by a very large series of figures, rather grandiloquently called on the title-page "engravings." Much space is given to the important subject of dental irregularities. Under this head are included, not only anomalies of development and structure, but the effects of too much or too little use, of "cribbing" and also fraudulent changes. The determination of the age by the horns is discussed in the cases of cattle, sheep and goats. There is also a short chapter on the age and teeth of man, which contains nothing new excepting the statement that "from a practical point of view the question of the age of man is one of sentiment." In a scientific work it strikes us as very far from a sentimental question.

The chapter on the duration of the life of the horse begins as follows: "According to Buffon, the duration of the life of the horse is, as in all other species of animals, proportionate to the duration of its growth. Man, who is fourteen years in growth, lives six or seven times that length of time; that is to say, he may live to ninety or one hundred. The horse, which requires about four years to attain its growth, may live six or seven times that length of time, that is, to twenty-five or thirty years." The part of this which applies to man is too silly for criticism. The introduction of such passages tends to shake the reader's confidence in statements on matters with which he is unfamiliar.

A LAW has been passed at St. Petersburg that a doctor who takes charge of an accident which he may happen to attend on the street shall be paid by the police in proportion to the importance of the case.

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Medical and Surgical Journal.

THURSDAY, FEBRUARY 4, 1892.

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TYPHOID FEVER IN CHICAGO.

Among the manifold advantages of Chicago from a sanitary standpoint, the superiority and perfection of its water-supply may well be reckoned as one of the greatest. Situated on the site of one of the most magnificent bodies of fresh water on the face of the earth, its opportunity of securing an unlimited supply of this necessity of life is unequalled. The best water in the world and the best adapted for culinary and domestic purposes is to be had for the cost of pumping, and the consequence is that the community has been duly improved, the city to-day enjoys the supreme advantage of a constant supply of this most essential element.—First paragraph of a well-concentrated article in the Chicago *Sunday Tribune*, December 13, 1891.

This article goes on to compare the water-supply of Chicago with those of other great cities of the world to the advantage of the former.

Health Commissioner Ware said yesterday (January 29th): I am certain that typhoid fever is not epidemic in Chicago, though I will say that it is more prevalent than I would like. The fact is not unconnected with the dredging and deepening of the river, due to the lack of sufficient pumping capacity at Bridgeport. It would be useless to deny that the river flows at present in a condition right out of the lake. I need not say how dangerous such a state of things is to the health of the city. The shore, too, is being gradually growing towards the main crib. How long the four-mile tunnel could be in operation next summer, and that all our water-supply could be obtained from a part of the lake beyond pollution.—Chicago *Tribune*.

There is something pathetic in Health Commissioner Ware's statement, and let us for the completion of the water-tunnels into the lake and for the completion of the four-mile tunnel. Everything urged by Dr. Ware for the improvement of the water-supply in quality and for the increase in quantity ought to have been done months and months ago. . . .

There is no immediate prospect for that rate at which the Health Commissioner so pathetically urges. Cannot the city authorities take note of the emergencies? Cannot Mr. Underwood hurry up the work on the four-mile tunnel so that it may be available next summer? Will not the Council, instead of wasting money in extending the north shore tunnel, use the money in extending the tunnel along the lake beyond the two-mile crib to a region of absolutely pure and wholesome water in the lake which the shore pollution cannot reach?

The four-mile tunnel, the completion of which is looked forward to with so much anxiety, since it is plain that the people must rely on it for pure water, as the Drainage Board will do nothing for them. . . .—Editorial columns, Chicago *Tribune*, January 31, 1892.

A paper entitled "Statistics on Typhoid Fever in Chicago," by Prof. Wm. T. Sedgwick, of the Massachusetts Institute of Technology, and Mr. Allen Hazen, chemist to the Massachusetts State Board of Health at Lawrence, was read before the American

Statistical Association on January 22d, and on the same day an abstract of the paper was published in the Chicago *Tribune*.

At the end of this original article on January 22d, Health Commissioner Ware of Chicago, pronounced the statement "ridiculous," and when asked if there had really been 2,000 deaths from typhoid fever in 1891, as therein stated, said: "You may most emphatically deny the assertion; this is done probably to hurt Chicago, the assertions made are so ridiculous that they answer themselves. There is no sort of an epidemic of typhoid fever, and has not been. This scare is started to frighten people from coming to the World's Fair." But the *Tribune*, January 23d, showed from the returns at the Health Department that the figures given by Messrs. Sedgwick and Hazen were correct, and that there had been 219 deaths from typhoid fever already in January, 1892. Their conclusions are inevitable. The State of Illinois has appointed Dr. John H. Rauch, formerly Secretary of the State Board, to investigate and report on the subject.

We have headed these remarks by parallel columns merely to show the need of such an exhibit of the actual facts as that made in the paper of Messrs. Sedgwick and Hazen, but have nothing except praise for the instant and candid recognition of this by the Chicago *Tribune*.

Messrs. Sedgwick and Hazen illustrated their paper by several tables of figures and two diagrams showing most graphically the mortality percentages of typhoid fever in Chicago, Philadelphia, New York and Boston between 1870 and 1891, and the rate of subsidence of the disease in Chicago after 1872, 1881, and 1885, in each of which years the number of cases was very large. We regret that we cannot reproduce these, but append an abstract of the paper furnished us by the writers.

It does not appear to have been generally recognized that within the last two years, and especially within the last nine months, typhoid fever has been unusually prevalent in the city of Chicago. The fact, however, is that an epidemic of really alarming proportions has prevailed in Chicago within the last year, and the latest returns indicate that that city is still suffering very severely from this important disease. Inasmuch as a World's Fair is soon to be opened in Chicago, this unfortunate condition becomes of more than local consequence, and should excite grave apprehension. If any remedy exists it ought to be found and applied without delay. It is especially important that the sanitary condition of Chicago in 1893 should be above reproach, because that of Philadelphia in 1876 was not. At the time of the Centennial Exhibition there was much complaint of the sanitary condition of Philadelphia. Physicians can testify that numerous cases of typhoid fever, which came under their observation in 1876, appeared to be plainly traceable to infection received in Philadelphia.

There was apparently ground for suspicion and complaint, for the official report of the Board of Health of Philadelphia, for 1876, relates that before the opening

of the exhibition "no little anxiety and solicitude for the welfare of the city was manifested, since many of the conditions favorable to the propagation of disease were present." This report also states that "no feature in the mortality records of 1876 is more interesting than the increase in the number of deaths from typhoid fever. There were 773 deaths from this disease, a number which is nearly double the mortality of the previous year, and which has not been approached in value since the year 1865."

By comparing the population of Philadelphia, in 1876, with the number of deaths from typhoid fever, we find that the death-rate from this disease for the Centennial year was remarkably high, namely, 9.36 per 10,000 inhabitants. The percentage of all deaths due to typhoid fever was also very high, namely, 4.09. Since 1876 there has been a great increase in the population of Philadelphia, and therefore in the annual number of deaths; but the number of deaths from typhoid fever per annum has never been as great as in that year, excepting once, and that only after twelve years, in 1888.

In the city of Chicago there has been for many years a large amount of typhoid fever. It was abundant, for example, in 1872, in 1881, in 1885 and in 1886. Between 1886 and 1890, however, it was less common, but in 1890 the death-rate from typhoid fever suddenly rose to a height almost exactly the same as that reached by Philadelphia in 1876, namely, to 9.16 deaths per 10,000 inhabitants, and 4.16 per cent. of all deaths which occurred in that year. In other words, typhoid fever prevailed as extensively in Chicago in 1890, as in Philadelphia in 1876. The actual number of deaths in Chicago, in 1890, from typhoid fever was, 1,008.

Remarkable as these figures were, they proved to be only the prelude to others still more remarkable in 1891. During the year just ended, Chicago has reported 1,997 deaths from typhoid fever, giving the prodigious death-rate from this disease of 16.64 per 10,000 of population, and a percentage of all deaths of 7.19. In the month of May alone, there were 408 deaths from typhoid fever reported. This is more than one-fourth as great as the whole number of deaths from this disease reported by the State Board of Health for the entire year before in the whole State of New York, containing six millions of inhabitants, and including two of our largest cities, New York and Brooklyn. In the single month of May, 1891, there were more deaths from this disease in the city of Chicago than in the city of New York during the whole twelve months of 1888 or 1889 or 1890 or 1891. In 1891 there were 383 more deaths from typhoid fever in Chicago than were reported in the previous year in the whole State of New York with five times the population, and nearly 1,400 more deaths than in London, with three and one-half times the population of Chicago.

As has just been stated, the whole number of deaths from typhoid fever in Chicago, in 1891, was 1,997. If

we multiply this number by ten we shall have an approximate estimate of the whole number of persons affected by this disease during the year, namely, about 20,000. This indicates that more than one and one-half per cent. of the whole population was affected in 1891 by a disease which is now classed as preventable.

It does not seem probable that these extraordinary figures can be surpassed, or even maintained in 1892 or 1893, but as an indication of the sanitary condition of Chicago, they must be a source of constant anxiety to its citizens, as they certainly are a menace to the sanitary success of the World's Fair.

We may now turn to an examination of the history of typhoid fever in Chicago. The necessary data are given in the official reports of the Department of Health of the city of Chicago. We cannot agree with the author of the statement in the annual report of 1872, that "although the overcrowding and barrack-life incident to the months following the great fire in October, 1871, brought its legitimate result in an increased death-rate, during the year no epidemic existed." The fact is, that in that year the death-rate from this disease and its percentage of mortality to the total mortality were greater than they have ever been since that time, until the present epidemic had developed. After 1872, there was a marked improvement until 1879, when there was a slight increase, followed by a great increase in 1881. The fever then slowly subsided until 1885, in which year there was another marked increase, followed by a decline in 1886, 1887, and in 1888. In 1889, a rise began which obtained the proportions of an epidemic in 1890, and reached the great height already referred to in 1891. The epidemic of 1872 fell off very rapidly in 1873; that of 1881 declined much more slowly; that of 1885 also slowly, so that unless some special effort is made to hasten the decline of the present epidemic, there is fear that typhoid fever may continue to be very prevalent in Chicago in 1892 and 1893.

In the next place we may inquire whether typhoid fever has been, on the whole, increasing or decreasing in Chicago. From 1871 to 1880 the average death-rate per 10,000 inhabitants, from typhoid fever, was 5.86. From 1881 to 1890, 6.75. The conclusion is inevitable that typhoid fever has, on the whole, increased in Chicago since 1880, while, within the last two years, it has risen to an extraordinary height.

We may next inquire how Chicago regularly compares with other cities in respect to mortality from typhoid fever. Here we naturally turn first to the larger American cities. We may begin with New York and Philadelphia. The averages of these cities are as follows: Chicago, 1870-1891, death-rate per 10,000, 6.90; New York for same period, 3.19; Philadelphia, 6.24. The death-rate from typhoid fever of all the cities of Massachusetts, 28 in number, for the twelve years 1878-1889 was 4.62 per 10,000 inhabitants, that of Boston being 4.32. The rate for Chicago during these years was 5.85. Turning to foreign cities, we may compare the following with Chicago:

Dresden, 1889,	mortality per 10,000 inhabitants	.	.	.	.	.	0.8
Leipzig, 1889,	"	"	"	.	.	.	1.7
Munich, 1889,	"	"	"	.	.	.	1.1
Cologne, 1889,	"	"	"	.	.	.	1.6
Berlin, 1889,	"	"	"	.	.	.	2.0
London, 1889,	"	"	"	.	.	.	1.4
Chicago, 1889,	"	"	"	.	.	.	4.7
Chicago, 1891,	"	"	"	.	.	.	16.6

From the foregoing facts it appears: (1) that typhoid fever has been excessive in Chicago for many years; and (2) we have already shown that it is, on the whole, increasing; while (3) within the last two years it has risen to extraordinary proportions.

In order to avoid misapprehension it ought to be stated, however, that the total death-rate of Chicago, as that term is best known and most often used, is not excessive. It has had since 1881 fewer total deaths in proportion to its population, than New York, and a much lower general death-rate. In respect to typhoid fever, however, the case is exactly reversed.

Although the paper is essentially statistical, the authors suggest that considering the prevailing views regarding the causation of typhoid fever, the question should be raised whether the water-supply is above suspicion. They prove briefly that this is by no means the case, for the paper closes with a number of quotations from the official reports of the health department of Chicago and the Illinois State Board of Health, describing the unsanitary condition of the Chicago River, and proving that the water-supply of Chicago is occasionally polluted with sewage. The authors urge, in view of all the facts, that immediate action be taken to check the epidemic and especially to protect the purity of the water-supply.

It is gratifying to learn that active measures are being taken to protect the water-supply by the opening of a new crib out some four miles, and by deepening the drainage canal towards the Mississippi.

The attitude of the *Tribune* is an indication that the public of Chicago will insist on having the necessary improvements carried out, and that they will not rest contented with the mere assertion that they have at their doors the best and biggest supply of drinking-water of any city in the world. In view of the World's Fair, and for those who realize how widely a few cases of typhoid fever may distribute the disease over a whole country, this is no longer a local question. The health commissioner of Chicago is ill advised in announcing that such a statement of figures from his own office is published "to injure Chicago"; or in attempting to break its force, as he now does, by calling in question the accuracy of the returns made by Chicago doctors, or attributing the cases of typhoid which he knows have occurred, to the bad air of the alley-ways! There probably are inaccurate returns of disease in Chicago as in other large cities, and there probably is some neglect to return at all; but we doubt if the Chicago practitioners are so pre-eminently inaccurate above those of other cities, or take especial satisfaction in returning this particular disease.

Given an unusual percentage of typhoid fever all the time, or at frequently recurring intervals in a par-

ticular city, and it is almost certain that something is wrong either with the water-supply or the drainage, or both. Bad drains and bad water are never so dangerous as when they are persistently proclaimed to be good.

MEDICAL NOTES.

VACCINATION IN ITALY.—On the first of the year, a new vaccination law went into force in Italy which makes vaccination compulsory. There is also a provision for re-vaccination under certain conditions.

THE SOUTH AMERICAN MEDICAL CONGRESS will meet this year in Cuba, in October, in order that it may be held at the same time with the celebration in honor of the four-hundredth anniversary of the discovery of America, to be held in that city.

THE THERAPEUTIC GAZETTE.—Dr. R. A. Smith has retired from the editorship of the *Therapeutic Gazette*, which will hereafter be under the charge of Dr. H. A. Hare. Dr. G. E. de Schweinitz will be editor of ophthalmic and aural therapeutics, and Dr. Edward Martin editor of surgical therapeutics.

THE INFLUENZA IN LONDON.—During the week ending January 16th, the number of deaths due directly to the influenza rose to 271 from 95 the previous week. This does not include the large number of cases in which influenza was reported as a complication. During the week ending January 23d the number of deaths primarily due to influenza rose to 506, and the total mortality to more than double the usual rate. There seems to be an excitement almost amounting to a panic among certain classes in the community. Since the death of the Duke of Clarence, the government has decided to institute an official investigation of the disease, with the view of taking any possible measures for its limitation. The Archbishop of Canterbury has issued a special prayer against influenza.

LADY BROOKE'S REMEDY FOR INFLUENZA.—It is reported by cable from England that Lady Brooke has been trying to raise a fund for the gratuitous distribution of about 2,000 bottles of brandy among the poor who were suffering from influenza, on the theory that stimulants are the best treatment for the disease. As might be expected, the project did not meet with a very favorable reception.

THE NEW YORK CITY INSANE ASYLUMS.—The committee appointed by the Mayor of New York to visit the insane pavilions on Ward and Blackwell's Islands, have found that in all the eleven buildings provided for patients in different stages of insanity, there are accommodations for 1,091 at the utmost, yet there are now in the institution 1,817 patients crowded close together. Every single room in the main asylum has from four to six beds in it, when there should be only one. Even in the corridors, which were originally provided with alcoves to be used as sitting-rooms, beds are ranged along the walls so close together that the patients have to climb in over

the foot-boards in order to get in at all. In what is known as the violent pavilion, about 280 unfortunates are crowded into rooms originally intended for 190 persons.

LABORATORY OF HYGIENE, UNIVERSITY OF PENNSYLVANIA. — It is announced that the laboratory of hygiene of the University of Pennsylvania will be opened for practical work on February 1, 1892. The work of the laboratory will be under the charge of the director, Dr. John S. Billings. Dr. A. C. Abbott has been appointed first assistant, and Dr. Albert A. Ghriskey, assistant in bacteriology. A course in practical hygiene and an elementary course in bacteriology, each of eight weeks, have been established.

NEW ENGLAND.

ASSISTANT PORT PHYSICIAN. — Francis A. Lane, M.D., has been appointed assistant port physician by the Mayor in place of Rufus E. Darrah, M.D., resigned.

LAST WEEK'S DEATH-RATE IN BOSTON. — The number of deaths in Boston last week was 225, against 181 the corresponding week last year. The death-rate was 25.4. The number of deaths from consumption was 35, pneumonia 39, bronchitis 16. The number of persons over sixty years of age was 59. Seventeen deaths were reported as due to influenza, of which twelve were complicated with some other disease. Since the week ending January 9th the fatal results of the epidemic have been steadily diminishing.

BREQUESTS TO INSTITUTIONS IN SALEM. — By the will of the late George Peabody, of Salem, \$5,000 is left to the Salem Hospital, \$2,000 to the Peabody Institute, \$1,000 to the city of Salem, the income to be used to purchase fuel for the very poor.

THE USE OF TOBACCO BY MINORS. — The Committee on Public Health of the Massachusetts Legislature will give a hearing to parties interested in a petition for legislation to prevent the use of tobacco by persons under sixteen years of age, on Friday, February 5th, at 11 o'clock.

HOSPITAL FOR EPILEPTICS. — The Governor of Massachusetts has sent a message to the House recommending a State institution for adult epileptics, with the report of the committee of the Massachusetts Medical Society appointed to consider the matter. The State Board of Lunacy and Charity has indorsed the recommendation. In conclusion, the governor says: "In my judgment, the facts and reasons stated in the communication entitle the recommendation to your early and favorable action. I specially commend the suggestion that the institution, if established, should be in the form of cottage hospitals."

MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH. — The annual meeting of the Association was held in Boston last week. Several papers were read and the following officers were elected for the

year: President, H. P. Walcott, M.D.; Vice-presidents, S. H. Durgin, M.D., S. W. Abbott, M.D.; Secretary, L. F. Woodward, M.D.; Treasurer, J. B. Field, M.D.

DRINKING-WATER OF MASSACHUSETTS. — The report of the State Board of Health recently transmitted to the Legislature shows that the low water in the streams of the State during the summer and autumn has been accompanied by a much greater degree of pollution in those streams which receive sewage, than has been noted at any time since 1887. During the summer a large number of the spring waters sold for drinking purposes, were collected for examination and careful inspection of the surroundings of the springs were made. Some of these springs, situated in populous districts, were found to have a large amount of pollution. Much time has been spent during the year in the study of typhoid fever in relation to the water-supply. The Board recommends the continuance of the investigations already commenced, and also others indicated as desirable. For these purposes, it is estimated that \$27,000 will be required.

MORTALITY OF NEWPORT, R. I. — During the past year there were 431 deaths reported, a large increase in the number for some years passed. The annual death-rate was twenty-one per thousand as against seventeen in 1890, and less than sixteen for three previous years. There was a marked increase in the number of deaths due to pneumonia and senile asthenia, undoubtedly due to influenza. The average age of the decedents was forty years, the average age of those dying from consumption was thirty-seven years.

NEW YORK.

A DIAGNOSIS OF ALCOHOLISM. — A coroner's jury has censured the ambulance surgeons of the Chamber Street Branch of the New York Hospital, for refusing (on the ground that it was a case of drunkenness) to take to the hospital a man who was suffering from a fracture of the skull resulting from a fall into the hold of a steamship. The verdict in the case concludes as follows: "We recommend that in cases where there is any doubt whether an injured person is suffering from alcoholism or not, the same should, under all circumstances, be taken to an hospital for a closer examination."

STATE CARE OF INSANE. — Mayor Grant has appointed an advisory committee of prominent citizens, one of them the President of the Tax Department, to report upon the advisability of the city's availing itself of the provisions of the law passed in 1890, relative to State care of the insane, which permits the city to turn over its insane to the State, if it should not desire to continue to care for them itself. Under the statute, if the city elects to entrust its insane to the care of the State, it must also transfer to the State all the buildings it now has in use for this class of dependents. In his recent annual message, the Mayor showed that the cost to the city of maintaining its insane is about

\$500,000 a year, and that the overcrowded condition of its asylum buildings renders necessary the early erection of more, unless the whole matter is turned over to the State.

HEALTH OFFICER OF THE PORT.—The Governor has appointed Dr. William T. Jenkins, of New York, to the important position of Health Officer of the Port, which has been held since 1880 by Dr. William H. Smith. While this is a political appointment, it is generally regarded as an excellent one as far as the qualifications of the new officer are concerned. Dr. Jenkins was born at Holly Springs, Mississippi, in 1855. He studied medicine at Bellevue Hospital Medical College, New York, and at the University of Virginia, from the latter of which he graduated. He settled in New York. In 1882 he received the appointment of Coroner's Physician, and afterwards became Deputy Coroner, in which position he is now serving his fourth term. By his appointment Dr. Jenkins becomes *ex officio* a Commissioner of the New York Board of Health, the other members of which are Charles G. Wilson, President, Dr. Joseph D. Bryant, and President Voorhis of the Police Board.

A CASE OF SNAKE-BITE.—While handling her reptiles the other day in a dime museum on Fourteenth Street, a female snake-charmer was bitten in the cheek by a large rattlesnake. One of the other performers promptly put his lips to the wound and sucked out as much of the poison as possible, and after being well dosed with whiskey the woman was taken to the New York Hospital, where she is in a fair way to recovery. It is stated that this is the third time that she has been bitten by a rattlesnake.

ANNUAL ELECTION OF OFFICERS.—At the annual meeting of the New York County Medical Association held January 18th, the following officers were elected: President, Dr. S. B. Wylie McLeod; Vice-president, Dr. Wm. T. White; Recording Secretary, Dr. P. Brynberg Porter; Corresponding and Statistical Secretary, Dr. Augustus D. Ruggles; Treasurer, Dr. John H. Hinton; Member of the Executive Committee, Dr. Beverhont Thompson. The Statistical Secretary reported that during the year the membership had been increased by 148, and that there were now 701 names on the roll. At a meeting of the Section on General Medicine of the Academy of Medicine, held January 19th, Dr. A. A. Smith was elected Chairman and Dr. Charles E. Quimby, Secretary. The Board of Directors of the New York Post-Graduate Medical School and Hospital has re-elected the following officers for the ensuing year: President, Dr. D. B. St. John Roosa; Vice-president, Dr. George H. Fox; Secretary, Dr. Clarence E. Rice; Treasurer, Dr. L. Bolton Bangs. Four hundred and eighty-three practitioners of medicine, from the United States, Canada and the West Indies, attended the courses at the school during the past year, and as the present quarters are inadequate for the growing wants of the institution, the Directors propose erecting a new college building as soon as the necessary funds can be secured.

Miscellany.

BICARBONATE OF POTASH IN INFLUENZA.

SOME months ago Mr. John Crerar¹ advocated the use of bicarbonate of potash in large doses, thirty grains every two or three hours, at the onset of an attack of influenza, on the theory that the blood, if made more alkaline, would resist the invasion of the micro-organism. His conclusions were that, "if used before the attack it prevents the disease. It destroys the power of the disease within twenty-four hours, generally within four or six hours. The strength is conserved, and the convalescence is short and satisfactory. Sequela are conspicuous by their absence. The death-rate is reduced to a minimum. It has more power over influenza than is exerted by any method of treatment over any other disease. If adopted by the whole profession it would make influenza non-existent in one week. It rests upon a sound scientific foundation."

In a leading article, the *Lancet* of January 23d, says that the last two conclusions may be open to question, but the preceding are statements which no medical practitioner of standing would venture to put forward without good cause. "We may fail to be convinced of his logic, and yet not refuse to accept his facts; and the evident sincerity of his statements, which are supported by the experience of others, and particularly by the personal testimony of a well-known teacher in Edinburgh University, together with the results of the treatment in the wards of the Edinburgh Infirmary, seem to warrant some attention being paid to them."

OBITUARY.—CLAUDIUS M. JONES.

THE subject of this sketch, whose early death occurred at the Massachusetts General Hospital, Sunday, the 24th of January, was born in Worcester, Mass., the 22d of February, 1845. He received his early education and preparation for college in the public schools of Worcester. In 1862 he entered Harvard College, and was graduated in due course in 1866, the third in rank in his class. During the next few years after graduation he taught as a private tutor in Great Barrington. In 1875 he received the degree of Doctor of Medicine from the Harvard Medical School, at the head of his class. He immediately began a service of eighteen months as house-officer in the Massachusetts General Hospital. This completed, he spent two years in study in various cities of Europe. The bulk of his work was, however, done in Vienna. He had the wisdom to prepare himself by study of the German language in Leipzig, before he went to Vienna, to receive the full benefit of his study in the latter city.

In 1877 he began practice in Boston, and the rest of his life was continuously and actively in practice. During this period he was always connected with the Boston Dispensary. At one time he had charge of two districts of the Dispensary with a room at the central office, in addition to his private practice. In late years he enjoyed greatly his service as physician to the Samaritan Hospital.

His personal character and his intellect were of the highest. Entirely self-reliant, he was at the same time modest and unpretentious. His scholarly tastes made intellectual pursuits his delight. He once said to the writer of this sketch that if he could find time he should enjoy following by himself the West Point course in mathematics. When very busy he found time to read some of the Latin classics. He read French as fluently as he spoke German. Though often urged by his friends to take a much-needed

¹ Lancet, Dec. 19.

rest he worked persistently to the end, which came at the age of forty-six.

He had received the highest degrees from the Masonic fraternity.

Correspondence.

SANITATION IN JAPAN.

YOKOHAMA, JAPAN, January 8, 1892.

MR. EDITOR:—Through the kindness of Mr. Nakahama (Japanese Navy) I am enabled to offer you this abstract from "A Summary of the Two Annual Reports of the Central Sanitary Bureau attached to the Home Department of the Imperial Japanese Government for 1888 and 1889," published in Tokyo, 1891.

During 1885 and 1886 the cholera epidemic prevailed so extensively that hardly any part of the country escaped. By this calamity, the attention of the people was called to the importance of sanitation, which was quietly developed in the course of the years 1888 and 1889, free from infectious diseases. Previous to this time, after each appearance of the scourge, measures for inspection and disinfection were taken, but these, being under the control of the local authorities, were incomplete, isolated and wastefully expensive. The central government has, consequently, employed a sanitary engineer to make plans, examine the question of expense, and superintend the work at the demand of subordinate governments. The construction of water-works and improvement of drains and sewers have been begun in every part of the country. This problem has not yet been solved in regard to Tokyo, where the great extent of space makes enormous outlay necessary. The use of wells, surface-drainage, cesspools, etc., is yet very general in Tokyo and throughout Japan. In Yokohama, good water is brought in pipes from a lake in the hills, some twenty miles distant. (It might be suggested that individual domiciliary attention to cleanliness, boiling of the drinking-water, and thorough cooking of food, are good preventives against spreading of infectious maladies.)

May 6, 1889, regulations as to the organization and powers of the examining committee for the practice of medicine were made known by Imperial Decree, examinations being held in Kyoto, Tokyo and Nagasaki. During this year 569 persons passed the examination (27 dentists); 331 graduated in native medical schools and three in foreign medical schools (one dentist); 21 were permitted to practice within a limited region; 1,198 licenses of practice were returned (1,129 of persons who died, and 69 of those retired from the profession). The number of practitioners who were stopped from the practice by a judgment of the Central Sanitary Board, according to Regulations, was 52. For this year, the total number of physicians was 41,405; of midwives 32,111; the number of licensed apothecaries was 517. There are detailed regulations regarding—(1) control of medicine; (2) manufacturers of medicines; (3) druggists; (4) apothecaries; (5) care and sale of poisonous drugs. Physicians yet dispense their own drugs in practice. The ultimate aim, touching this, is to bring about a separation of the work of the dispensing apothecary from that of practitioner; but such change is necessarily slow, because it is an ancient custom that physicians here make their living by sale of medicines; the people also find this way convenient.

In pursuance of the sanitation plan, the various local inspectors were ordered to the Central Office for instruction.

Examination by analysis has shown that native canned goods are liable to adulteration, some specimens of Japanese condensed milk were good, others bad. *Sake* (native wine-whiskey) was found at times to contain salicylic acid. Confectionery occasionally showed red-lead and other injurious ingredients. Some of the investigations have bearing on Medico-legal questions. The number of examinations of food and drink is greater than before, showing the spread of sanitary ideas among the people.

At the Medical Botanical Garden in Tokyo, good results

have been obtained in the culture of a number of medicinal plants—the more important being *papaver somniferum*, *erythroxylon coca*, *atropa belladonna*, *rheum officinale* and *aspidium filix mas*.

Experiments at the Vaccine Farm (under control of Sanitary Bureau) showed that virus could be preserved for 200 days: glass tubes are used, and furnished to native and foreign physicians. Clothing, etc., is subjected to the moist-heat system for disinfection. "Sick-rooms should be cleansed with a strong carbolic-acid solution or lime-milk, the mats and screens, etc., exposed to the sun-light—the rooms being also thrown open to currents of air." Experiments showed the efficacy of quick-lime as a disinfectant for the cholera poison.

The total number of births for the whole population in 1889 was 1,209,910 or 30.17 per 1,000 persons, 26.31 being the average for the previous nine years. The deaths were 816,241 or 20.36 per thousand, 19.37 being the average for the previous nine years.

The report contains several tables giving details of the numerical relation of sex, births, deaths, population, health of the various territorial and political subdivisions, data concerning the investigations at the Vaccine Farm; and vaccinations, with ages.

Typhoid fever has been somewhat prevalent. A bacillus was found in connection with an epidemic of dysentery, "but it cannot be lightly taken as cause of the disease." Vaccination has greatly lessened the number of cases of small-pox.

At the present time, small-pox is so prevalent as to render revaccination of foreigners prudent.

Very truly yours,

F. B. STEPHENSON, Surgeon, U. S. N.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, JANUARY 23, 1892.

Cities.	Estimated population for 1891.	Reported deaths in week.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Aetic lung disease.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York	1,151,301	866	259	12.00	18.70	3.50	.50	5.30
Chicago	1,069,825	646	249	20.10	19.35	2.35	3.30	4.95
Philadelphia	1,046,964	541	187	15.84	12.96	3.54	2.34	8.82
Brooklyn	841,244	399	130	14.86	22.60	3.00	2.22	8.75
St. Louis	551,170	350	115	—	—	—	—	—
Boston	448,477	255	67	6.63	36.81	2.73	—	2.31
Baltimore	434,439	—	—	—	—	—	—	—
Cincinnati	296,908	137	52	8.85	20.72	.14	2.22	6.66
Cleveland	280,720	120	35	14.33	35.55	.77	.77	11.06
St. Paul	242,029	—	—	—	—	—	—	—
Pittsburg	240,000	117	47	19.55	14.45	.85	5.95	10.20
Milwaukee	240,000	116	56	17.20	24.08	4.30	2.58	8.60
Washington	230,392	135	41	7.40	39.22	.74	4.44	.74
Nashville	76,162	25	—	—	—	—	—	—
St. Louis	65,553	34	16	—	2.94	—	—	—
Portland	42,425	4	4	6.25	25.00	—	3.13	3.13
Worcester	84,625	35	10	5.72	17.16	—	—	5.72
Lowell	77,636	77	18	6.50	24.70	—	3.30	1.30
Fall River	74,356	44	20	9.06	45.45	—	—	2.27
Cambridge	55,727	6	6	12.00	16.60	—	—	12.00
Lawrence	55,727	27	2	—	25.90	—	—	—
Springfield	44,654	30	2	—	13.33	—	—	—
New Bedford	44,179	25	5	16.00	32.00	—	4.00	4.00
Fitchburg	40,735	18	3	—	—	11.11	—	—
Chelsea	38,201	27	6	7.40	—	—	—	—
Haverhill	27,949	13	—	15.38	36.76	—	—	15.38
Faunton	27,412	6	1	16.66	—	—	16.66	—
Glocester	24,651	—	—	—	—	—	—	—
Newton	24,373	19	1	—	—	—	—	—
Waltham	22,031	8	—	26.00	37.50	—	—	—
Fitchburg	22,037	11	4	—	18.18	—	—	—
Waltham	18,707	11	1	—	54.54	—	—	—
Clinton	17,281	3	0	—	33.33	—	—	—
Quincy	17,172	9	2	11.11	—	—	—	11.11
Weymouth	13,357	14	2	28.56	—	—	—	21.42
Medford	11,079	3	0	—	—	—	—	—
Clinton	10,424	—	—	—	—	—	—	—
Hyde Park	10,191	3	0	—	33.33	—	—	—
Peabody	10,158	5	0	20.00	—	—	20.00	—

Deaths reported 3,937: under five years of age 1,276; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhoeal diseases, whooping-cough, erysipelas and fevers) 547; acute lung diseases 824; consumption 387; influenza 160; diphtheria and croup 234; typhoid fever 112; scarlet fever 98; diarrhoeal diseases 42; measles 14; whooping-cough 14; erysipelas 13; cerebro-spinal meningitis 12; malarial fever 10.

From diarrhoeal disease Chicago 10, New York 7, Philadelphia 5, Cincinnati, Pittsburgh, Springfield and Mableton 2 each; Brooklyn, Boston and Washington 1 each. From measles New York 8, Chicago 3, Philadelphia, Brooklyn and Milwaukee 1 each. From whooping-cough Chicago 4, Fall River 3, Boston 2, New York, Philadelphia, Cleveland, Milwaukee and Newburyport 1 each. From erysipelas New York 6, Chicago 2, Philadelphia, Brooklyn, Cleveland, Pittsburgh and Lowell 1 each. From cerebro-spinal meningitis Chicago 6, New York 3, Brooklyn, Boston and Washington 1 each. From malarial fever Brooklyn 6, New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 1,057,736, for the week ending January 16th, the death-rate was 33.0. Deaths reported 1,057,736.

The death-rate ranged from 14.6 in Huddersfield to 57.0 in Portsmouth; Birmingham 20.0, Gateshead 35.3, Hull 25.7, Leeds 25.1, Leicester 17.1, Liverpool 42.0, London 40.0, Manchester 26.6, Newcastle-on-Tyne 31.5, Nottingham 22.5, Preston 22.5, Sheffield 20.3, Sunderland 25.5, West Ham 33.6, Wolverhampton 44.1, Bradford 15.7.

METEOROLOGICAL RECORD.

For the week ending January 23, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer		Thermo-		Relative		Direction		Velocity		Wind & Weather.		Rainfall in inches.
	Daily mean	Maxim.	Minim.	A. M.	P. M.	A. M.	P. M.	A. M.	P. M.	A. M.	P. M.		
S. -17	30.45	30	29	31	29	27	72	N.W.	S.	+	12	C.	.06
M. -18	30.49	30	29	30	28	26	72	S.W.	S.	-	15	O.	.16
T. -19	29.85	29	28	30	26	24	74	N.W.	N.W.	-	15	O.	.10
W. -20	29.85	29	28	30	26	24	74	S.W.	S.W.	-	15	O.	.10
F. -21	30.10	30	28	30	28	26	74	S.W.	S.W.	+	11	O.	.06
S. -22	29.75	29	28	30	26	24	72	S.W.	S.W.	+	17	O.	.06
S. -23	29.74	29	28	30	26	24	72	S.W.	S.W.	+	12	O.	.06
MEAN												.15	

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., thundershower. + indicates trace of rainfall. MEAN Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 23, 1892, TO JANUARY 29, 1892.

CAPTAIN HENRY G. BURTON, assistant surgeon, U. S. Army, having been found incapacitated for active service by an Army Retiring Board, is granted leave of absence until further orders on account of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 30, 1892.

A. M. D. McCORMICK, passed assistant surgeon, detached from Receiving-ship "Minnesota," and to the U. S. S. "Charleston."

GEO. H. BARBER, assistant surgeon, detached from the U. S. S. "Charleston" and to the Receiving-ship "Minnesota."

A. G. CARELL, passed assistant surgeon, detached from the U. S. S. "Newark" and ordered to the U. S. S. "Kearsarge."

JAMES STOUGHTON, assistant surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the Training-ship "Portsmouth."

M. S. GURST, assistant surgeon, detached from Navy Yard, Norfolk, Va., and to the Naval Hospital, Norfolk, Va.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT, SECTION IN OBSTETRICS AND GYNECOLOGY.—A regular meeting will be held at 15 Boylston Place, Wednesday, February 10, 1892, at 8 o'clock P.M.

Dr. Malcolm Storer will read on "The Radical Treatment in Certain Cases of Grave Accidental Concealed Hemorrhage." Discussion on "Pathology, Prophylaxis and Treatment of Perpetual Eclampsia," opened by Drs. A. D. Sinclair and Edward Reynolds.

GEORGE HAVEN, M.D., Secretary.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held on Monday, February 8, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P.M.

Papers: Dr. J. C. Warren, "Operative Treatment of Goitre"; Dr. A. Condie, Jr., "Three Cases of Tuberculosis of the Palate."

The Society is reminded that this is the last meeting of the season at which new members can be proposed.

G. SMITH, M.D., Secretary.

THE EIGHTH ANNUAL MEETING OF THE FIFTH DISTRICT BRANCH OF THE NEW YORK STATE MEDICAL ASSOCIATION will be held in Brooklyn, on Tuesday, May 24th, 1892. All Fellows desiring to read papers will please notify the Secretary, E. H. Squire, M.D., P. O. Box 94, Brooklyn.

RECENT DEATHS.

CHARLES P. PENROD, M.D., Ph.C., M.M.S.S., died January 31st, aged 31. He received the degree of M.D. from the University of Michigan in 1881, and of Ph.C. in 1883. He came to Boston in 1884, as Professor of Materia Medica and Botany at the Massachusetts College of Pharmacy. He was also Professor of Microscopy and Dental Histology at the Boston Dental College. He was a fellow of the American Association for the Advancement of Science, and a member of the convention for revising the United States Pharmacopoeia in 1890.

HOWARD SMITH, M.D., of New Orleans, died January 30th, aged sixty-nine. He served as a surgeon in the Confederate Army and had control of the entire medical service of the Mississippi department. He afterward filled the chair of materia medica in the New Orleans School of Medicine.

WILLIAM H. H. MASON, M.D. (Dart. 1843), of Montenborough, N. H., died January 26th, aged seventy-four. He had served in the State House and Senate, on the Constitutional Convention and the State Board of Agriculture.

LUMAN H. LUCE, M.D. (Bowd. 1859), M.M.S.S., of West Tisbury, died January 30th, aged forty-six. He was the author of several articles on the climate and history of Martha's Vineyard, as well as on different medical subjects.

HAROLD W. SHOVE, M.D., of Woodbury, Conn., died January 26th, aged sixty-five years. He graduated from the Yale Medical School in 1863, and during the war served as surgeon in the navy.

CHARLES A. SAYTORY, M.D. (Dart. 1836) M.M.S.S., of Lowell, died February 2d, aged seventy-eight. He had been three times President of the Middlesex North District Medical Society.

SIR GEORGE EDWARD FAGET, M.D., F.R.S., died in London, January 29th, aged eighty-two. He had been President of the British Medical Association and of the General Medical Council of the United Kingdom. He was made Regius Professor of Physics at Cambridge in 1872.

ALFRED CARPENTER, M.B.C.S., L.S.A., Examiner in Public Health in the Universities of London and Cambridge and the author of several works on different sanitary subjects, died in London, January 27th, aged sixty-six.

BOOKS AND PAMPHLETS RECEIVED.

Thirty-sixth Annual Report of the Trustees of the Northampton Lunatic Hospital, for the Year ending September 30, 1891.

Water as a Local Anesthetic—Its Discovery American and not German. By Robert H. M. Dawbarn, M.D., New York. Reprint. 1891.

De la Chloroformisation a Doses Faibles et Continues. Par le Dr. Marcel Bandouin. Deuxième édition. Paris: Revue des Sciences Naturelles de l'Occident. 1892.

The Diseases of the Mouth in Children. Non-Surgical. By F. Forchheimer, M.D., Professor of Physiology and Clinical Diseases of Children. Medical College of Ohio. Philadelphia: J. B. Lippincott Company. 1892.

Treatise on Gynecology, Medical and Surgical. By S. Pozzi, M.D. Translated from the French Edition under the supervision of and with Additions, by Brooks H. Wells, M.D. Volume I. New York: William Wood & Co. 1891.

Four Congenital Tumors of the Head and Spine, all Submitted to Operation. I. Meningocele; II. Cervical Spina Bifida; III. Sacral Spina Bifida; IV. A Tumor of the Post-Anal Gut, in Connection with a Dermoid Cyst. By W. W. Keen, M.D., Phila. Reprint. 1891.

Original Articles.

LABOR COMPLICATED BY 'PROLAPSED TUMORS.'

BY EDWARD REYNOLDS, M.D.

CASE I. On February 5, 1888, I was asked by Dr. Lamb, of Arlington, to see Mrs. F., who had at that time been in labor thirty hours. The patient stated that for many years she had had occasional attacks of sharp pains in the right iliac fossa, and had been treated for ovaritis by several different physicians.

Her first pregnancy was entirely normal, except for a somewhat unusual size of the abdomen, which at seven months corresponded to the usual size at term. Labor set in spontaneously at that time.

On vaginal examination, the finger encountered a hard, smooth, elastic mass almost filling the pelvis and lying between the vagina and rectum. No change had been noticed in her condition from the beginning of labor till the time of my arrival. The os uteri had not been reached. I succeeded in finding it some distance above the upper edge of the symphysis pubis, there being barely space to pass the finger between the symphysis and the tumor. The new growth was not connected with the cervix, and so far as I could judge, was not affected by the tolerably free motion of the cervix, which it was possible to effect by the combined motion of both hands. It was very slightly, if at all, movable. Its consistency would have accorded well with the supposition, either of a hard elastic solid, or of an extremely tense cyst.

After nearly an hour's taxis under ether, I succeeded in raising the tumor so far that two fingers could now be passed between it and the pubes, but entirely failed at any further progress. After waiting three hours, I found that the elevation which had been gained had not been lost, but no more had occurred. Temperature was then 101.5°, the pulse 90; a rise of two degrees in the temperature and of fifteen beats in the pulse since I first saw her.

The pains failing, the mouth and vagina being dry and hot, I again etherized, and after about half an hour of taxis, raised the tumor sufficiently to permit the passage of the hand between it and the anterior pelvic wall; but my utmost efforts failed to gain more than this.

The condition of the woman being such that further delay was very distinctly inadvisable, I passed the hand by the tumor and found that the os was about the size of a ten cent piece, but so extremely soft that its manual dilatation to a size which admitted the fist was easily accomplished in less than two minutes. The child's head rested against the upper surface of the tumor. It was readily turned and extracted, the operation consuming but five minutes from the time when the fingers entered the os until the delivery of the head through the vulva.

I had anticipated considerable difficulty in bringing even a small head past the tumor; but after the extraction of the shoulders I was surprised to find that the head was in the pelvis. The child was not asphyxiated.

Dr. Lamb readily expressed the placenta, while I was busy in wrapping up the child at the other side of the room. It weighed about four and one-half pounds, and died within a few hours.

On my return, I made a vaginal and bi-manual examination to ascertain the condition of the tumor, but, to my surprise, entirely failed to find it. Indeed, after making what I considered a careful palpation of the abdomen, I was equally at a loss to find any evidence of its presence. I was therefore inclined to believe that the tumor had been an ovarian or parovarian cyst, which had ruptured during the extraction of the child; and expressed the opinion that the after-history of the case would depend on the contents of the tumor.

I did not again see the patient until the eighth day, when I learned that her convalescence had been entirely uneventful, except that the temperature had been somewhat high at night, though normal in the morning. There were no special symptoms to account for this temperature, except considerable nervousness, some pain in the right iliac fossa, and an indefinite resistant mass in the same situation. This mass gradually dissolved and disappeared, and the patient made a complete recovery.

It was supposed that the cyst had been parovarian, and its contents therefore but slightly irritating to the peritoneum, until an examination at the end of some weeks demonstrated the presence of a globular and apparently uniloculated cyst of the right ovary, lying upon the right side of the uterus, and mainly within the true pelvis.

Some months later, the tumor was successfully removed by Dr. John Homans, and proved to be a thick-walled dermoid cyst, filled with the semi-solid material characteristic of this class of growth. It contained a considerable quantity of hair and some calcareous plates. The subsequent history of the case has been uneventful.

CASE II. On July 17, 1891, Mrs. L., was referred to the Boston Lying-in Hospital by Dr. George E. Stackpole. She had had a considerable hemorrhage before entrance, was somewhat blanched, and was still flowing moderately.

In my temporary absence from my office, she was seen by Dr. George Haven, who, however, kindly sent again for me and postponed interference in anticipation of my arrival.

The woman being already so anemic that any further loss of blood seemed likely to be dangerous, I at once put her under ether. Vaginal examination demonstrated the presence of an extremely hard, somewhat lobulated tumor, of about the size of a seven months fetal head, lying between the vagina and rectum, and crowded so far down that the posterior vaginal wall was pressed against the vulva.

The finger passed readily between the tumor and the symphysis pubis to reach the os, which was about opposite to its upper edge. The cervix was somewhat long, and although the os was patulous, we failed to ascertain the cause of the hemorrhage. The tumor was apparently fixed in its position, and both Dr. Haven and I were inclined to believe that we could feel on its anterior and outer aspect a band which passed inward and upward, and which might well have been the Fallopian tube.

Although we felt that a definite diagnosis was impossible, we were inclined to think that the probabilities were in favor of its being a multilocular ovarian cyst. Some minutes of taxis in the lithotomy position proving unavailing, I had the patient placed in the genu-pectoral, where she was held by the house officers,

¹ Read before the Obstetrical Society of Boston, December 12, 1891.

and by Dr. W. H. Prescott, who happened to be present, and kindly rendered much valuable assistance.

After a taxis of fifteen minutes, the tumor suddenly receded above the brim, and passed beyond the reach of my touch. I then passed the finger into the os, and found that the surface of the placenta presented, the insertion being apparently very nearly central. I dilated the os manually, and detached the placenta upon one side until I was able to pass my fingers through the membranes at its edge, when I turned and deliver a very much exsanguinated, still-born child.

The woman made an entirely uneventful recovery. Dr. Haven kindly saw her with me on the day of her discharge from the hospital, when the tumor was found to have decreased to about the size of a six months head, was still of very firm consistency, and somewhat lobulated. We again thought that we could feel a tube extending from the right cornu of the uterus, and becoming lost on the surface of the tumor, and were inclined to adhere to our former diagnosis.

I saw her a fortnight later at the Stamford Street Dispensary for Women. The tumor was again decreased in size, the lobulations were less distinct.

Her next visit was at the expiration of another fortnight; that is, six weeks after delivery. The tumor was then of about the shape of a normal kidney, or perhaps a little larger, firm, elastic and resistant, freely movable, lying habitually at the bottom of Douglas's fossa upon the right side of the uterus.

I did not see her again until the expiration of fully three months from the time of delivery; since when I have seen her at weekly intervals, until ten days ago. The tumor has remained entirely unchanged. It causes no symptoms, whatsoever; but the patient, who is aware of its existence, was extremely desirous to have it removed; and at her request, I referred her to the Massachusetts General Hospital, where she was seen and recommended to enter by Dr. J. C. Warren. Dr. Warren informs me that he recommended her admission for the purpose of more careful examination and consultation before deciding for or against the question of operation. The reasons against the removal of the tumor are, of course, that its presence is causing no symptoms; but, upon the other hand, it seems a question whether the dangers of laparotomy for the removal of a small and movable tumor, furnished, as this apparently is, with a long and slender pedicle, are not less than those which are likely to attend the presence of a tumor in this situation, in the person of a young, married, and presumably fertile woman.

The question of diagnosis is an interesting one. It seems hardly probable that an ovarian cyst would decrease so much in size during the puerperium. The situation of the tumor and the length of its pedicle seem to be somewhat opposed to the diagnosis of a subperitoneal uterine fibroma, while ovarian fibroid, though known to exist, is so rare a disease, that an attempt to establish such a diagnosis, prior to operation, would be decidedly rash.

The subject of the diagnosis and management of intra-pelvic tumors which are first discovered during labor, is one of considerable interest, on which but little is said in the text-books, but which, I think, is, nevertheless, amenable to clear and easily established rules.

For obvious anatomical reasons, the new growth, if intra-pelvic, must necessarily lie behind the vagina;

its presence necessitates a differential diagnosis between a bony tumor of the posterior or lateral pelvic wall, an interstitial or subperitoneal fibroid of the lower portion of the posterior uterine wall, an ovarian cyst, or a cyst of the recto-vaginal septum. Osteoid tumors are to be distinguished from the other forms by the relation which they bear to the rectum, which must necessarily lie, to a greater or less extent, across the anterior surface of any exostosis. Cysts of the recto-vaginal septum rarely attain a very large size, and are differentiated from the other tumors mainly by the absence of any pedicle when the tissues above them are compressed between the two hands; the fingers of one being passed into the rectum behind the tumor, and those of the other employed either in the vagina or through the abdominal wall. In case such a cyst should attain a size which rendered a bimanual examination impossible, its differentiation from a cyst of the ovary would probably be impossible until after the failure of taxis had compelled a resort to operation.

At first sight, it would be thought that the consistency of an ovarian cyst would be so unlike that of a fibroid that no further test would be needed; yet in my limited experience, which comprises only these two cases of ovarian tumor, and but three of intra-pelvic fibroids, the tumor was in each case rendered so tense by the pressure from above, that this test was considered worthless in each of the five cases; and the only evidence which seems to me of real value is the demonstration of the presence or absence of a firm connection between the uterus and the new growth. This is to be made more by the results of abdominal palpation than by vaginal examination; since the region in which the connection, if present, would be found, is almost necessarily beyond the reach of the vaginal finger. If the tumor be a fibroid, motion imparted to the fundus and body of the uterus would almost necessarily affect the tumor; since the rapid growth which is characteristic of fibroids during pregnancy, must almost necessarily involve the conversion of even a slender pedicle in a subperitoneal fibroid into an attachment which is, at least temporarily, tolerably firm. The establishment of the diagnosis between these two forms of new growth is of considerable practical importance; since the ultimate treatment which they demand is radically different.

Besides the three cases of fibroids with which I have been personally acquainted, I have knowledge of three others which have occurred in this immediate vicinity. One of these latter cases was subjected to Porro's operation at the advent of labor; the other five were delivered either by normal labor, or by low forceps, after the spontaneous recession of the tumors, in spite of the fact that in each case the size of the latter was such that delivery by any other means than the Cesarean section seemed at first sight impossible.

The explanation of this occurrence is easy. The non-pregnant uterus contains but a small amount of muscular tissue. So, too, uterine fibroids under ordinary circumstances are made up mainly of connective tissue, which is, however, interspersed with a small amount of unstriped muscle; the histological structure of the uterus and the tumor being closely similar.

The pregnant uterus is, upon the other hand, well known to be composed almost wholly of muscular tissue, which is developed during pregnancy. Although I am unable to quote any post-mortem examination of fibroid tumors of the parturient uterus, it seems highly

probable, both from analogy and from the fact of the rapid growth, and altered consistency which the tumors assume during pregnancy, that their structure at term is again so closely similar to that of the uterus at the same time, as to explain the reduction of volume and the recession upward which is observed to occur, as being the effect of a muscular contraction and retraction of the fibres, such as is observed in the substance of the uterus.

It is then my belief, and I think that of most obstetricians, at least in this vicinity, that intra-pelvic fibroid tumors should be left to nature; at least, until the advent of marked exhaustion renders immediate delivery necessary in the interests of the mother; when in the probably somewhat rare case of the failure of retraction on the part of the tumor, abdominal section and the performance of Porro's operation would undoubtedly be indicated.

With prolapsed ovarian tumors, upon the other hand, no such result can be expected. The tumor must either be raised above the brim of the pelvis by properly directed taxis, or else the delivery can be effected only by the employment of some cutting operation. Taxis must consist of upward pressure upon the lower surface of the tumor through the vagina and rectum, or through both combined. Its successful performance usually requires the administration of ether, and is greatly helped by the assumption of the knee-chest position, as was apparent in my second case; though it was also evident to all who were present that the maintenance of this position in an etherized woman would necessarily require an amount of assistance which would often be obtained with difficulty in private practice. The advantages of the position are, however, so great, that I should be inclined to make strenuous efforts to obtain it in any future case, no matter how situated.

Taxis should be persistently employed for as long a period as seems possible without undue exhaustion of the patient; and if unsuccessful, should be repeated at intervals, until the appearance of the familiar indications which demand immediate delivery.

If at this time a final effort at taxis should prove unavailing, three courses are open to the attendant; namely, laparotomy for the performance of the Cesarean section and the removal of the tumor, aspiration of its contents per vagina, and vaginal ovariotomy.

Vaginal ovariotomy, that is, the incision of the posterior vaginal wall, the evacuation of the tumor, its removal through the incision, and the ligature of its pedicle, would probably under these circumstances become a tolerably easy operation. It is, however, rendered inadvisable by the great vascularity of the vaginal wall during parturition, and by the liability of extension of the incision into undesirable localities by laceration during the subsequent delivery; in addition to which we must still deprecate the entrance of lochia into Douglas's fossa, which must necessarily follow, and which would certainly increase the dangers of the case; though in the light of recent experience, it is probable that under aseptic conditions, this danger is much less than is generally supposed, the more especially as the situation of the incision would necessarily insure the best of drainage.

Aspiration of the cyst through the vaginal wall is a measure which, in these days of successful laparotomy, need hardly be considered. It would hardly be likely

to result in the complete evacuation of any but a unicocular parovarian cyst, since the multilocular character and viscid contents of a true ovarian cystoma, would almost certainly frustrate the purpose of the operation; and it is attended by very great risks of serious peritonitis.

The Cesarean operation, when performed before the advent of really serious exhaustion, and in the absence of visceral disease of the mother, has yielded of late years so very high a proportion of successes, that it is probable that it should be unhesitatingly adopted in any case in which taxis fails to remove the obstacle. Its prognosis would in all probability be but little complicated by a simultaneous ovariotomy; but, should the condition of the patient forbid any prolongation of the operation, this could be left for a second laparotomy.

SO-CALLED SPONTANEOUS COMBUSTION.¹

BY R. H. HARTWELL, M.D., AYER, MASS., *Medical Examiner.*

On the 12th day of May, 1890, while making a professional call in the outskirts of the town, I was summoned into the adjacent woods by a messenger, who stated that her mother was "burned alive."

Hastily driving to the place indicated (about four rods distant) a human body was found in the actual state of conflagration. The body was face downward; the face, arms, upper part of the chest and left knee only touching the ground; the rest of the body was raised and held from the ground by the rigidity of the muscles of the parts. It was burning at the shoulder, both sides of the abdomen and both legs. The flames reached from twelve to fifteen inches above the level of the body. The clothing was nearly all consumed. As I reached the spot, the bones of the right leg broke with an audible snap, allowing the foot to hang by the tendons and muscles of one side; those of the other side having burned completely off. Sending my driver for water and assistance, I could only watch the curious and abhorrent spectacle, till a common spading fork was found with which the fire was put out by throwing earth upon it. The flesh was burned from the right shoulder, exposing the joint, from the abdomen, allowing the intestines to protrude, and more or less from both legs. The leg bones were partially calcined. The clothing unburned consisted of parts of a calico dress, cotton vest, woollen skirt and thick, red, woollen undergarment.

The subject of the accident was a woman, forty-nine years of age, about five feet five inches in height, and weighing not far from one hundred and forty pounds; of active habits and nervous temperament. A wife and mother, she was strictly a temperate person, accustomed through life to hard work, one, who in addition to her household duties, went out washing and cleaning, besides doing a good share of the work in a large garden. On the fatal afternoon, she had — as the place showed — been clearing a lot of stumps and roots, and had set fire to a pile of roots from which it had communicated to her clothing, or it had spread into the woodland and had set fire to the clothing during her endeavors to stop it. The body lay about two rods from the burning pile. As proof that the flesh burned of itself, and nothing but the clothing set it afire, it may be stated that the accident occurred

¹ Read before the Massachusetts Medico-Legal Society.

after a rain; that the fire merely skimmed over the surface of the ground, not burning through the leaves; that there was nothing but charred leaves under the body; that her straw hat which lay several feet distant was simply scorched; that the wooden handle of the spade was only blackened.

The above case is interesting in several particulars. It is the first recorded case in which a human body has been found burning (that is, supporting combustion,) by the medical attendant. It differs from nearly all of the recorded cases, in that it occurred in a person in middle life, not very fat, and not addicted to the use of alcohol. It is interesting in a medico-legal sense. It proves that under certain conditions—conditions that exist in the body itself—the human body will burn. We have abundant proof in the many recorded cases of so-called spontaneous combustion (seventy-three are chronicled in medical literature) that the body has been more or less completely destroyed by fire, under circumstances that show that it will support combustion, and this has given rise to the belief in the spontaneous origin of the fire.

Up to the first part of the present century, the belief in spontaneous combustion was almost universal. Dr. Ogston, professor of medical jurisprudence in University of Aberdeen, in an able article in the *British and Foreign Medico-Chirurgical Review*, 1870, says there cannot be the least doubt that the weight of authority is in favor of spontaneous combustion, or at least, increased combustibility.

Of fifty-four writers on the subject, thirty-five have expressed an opinion. Of these, five are skeptical, Drs. Caldwell, Casper and Taylor and Chemists Bischoff and Liebig; three believe in increased combustibility, Dupuytren, Stillé and Guy and twenty-seven (including many illustrious names) believe in spontaneous combustion.

Dr. C. A. Stockwell, in the *Therapeutic Gazette*, March, 1889, page 168, in a lengthy article, carefully reviews many of the reported cases, and while neither admitting, nor denying spontaneous combustion, the paper appears to defend its possibility.

We know how quickly decomposition sets in, in certain cases without apparent cause, in well authenticated cases even before death takes place.

Sir William Gull, in London *Medical Times*, April, 1885, mentions a case of sudden death of a man of intemperate habits. The following day though cool, while there were no signs of ordinary combustion, the body was remarkably distended, and gas from punctures made in the skin burned like carburetted hydrogen. By the actual contact with fire, combustion of the body, more or less complete, might have taken place in this case.

The account of the mysterious death of Mr. Krook in "Bleak House," "call the death by any name your Highness will, attribute it to whom you will, or say it might have been prevented how you will, it is the same death eternally, inborn, inbred, engendered in the corrupted humors of the vicious body itself, and that only spontaneous combustion, and none other of all the deaths that can be died," calls forth this explanation from Mr. Dickens:

The possibility of what is called spontaneous combustion has been denied since the death of Mr. Krook, and my good friend Mr. Lewes, quite mistaken (as he soon found) in supposing the thing to have been abandoned by all authorities, published some ingenious

letters to me at the time when that event was chronicled, arguing that spontaneous combustion could not possibly be. I have no need to observe that, I do not wilfully or negligently mislead my readers. Before I wrote that description, I took pains to investigate the subject. I do not think it necessary to add the recorded opinions and experiences of distinguished medical professors, French, English and Scotch; contenting myself with observing that I shall not abandon the facts until there shall have been a considerable spontaneous combustion of the testimony on which human occurrences are usually received."

"The opinion of Stillé and Wharton on this subject is interesting. Admitting that the phenomena of spontaneous combustion, so-called, are incongruous with the laws of combustion, so far as they are known, it does not follow that we should reject as unworthy of belief, the many curious and authentic facts on record."

"These may be true, although incorrectly accounted for. Indeed, there are many examples of the spontaneous combustion of organic and inorganic matters which chemistry is unable to explain; but the number of cases now known, the uniformity in the description of the phenomena, and of the age and habits of the persons attacked, require us to regard them as scientific facts, yet unexplained."

"We do not hesitate also to affirm that a belief in the actual occurrence of the phenomena referred to (spontaneous combustion) may be entertained without a satisfactory scientific explanation."³

It is difficult to understand how the authorities just quoted could have held such opinions at a time when Levoisier and Davy had shown what takes place during, and what conditions are necessary for combustion, and so shortly after the exhaustive report of Liebig and Bischoff, proving the theory of human spontaneous combustion to be false, and making the statement that in the living body it is impossible, it shows that the belief in the spontaneous combustion of the human body is still extant.

It is not easy for us to comprehend how the human body, having seventy-two per cent. of water and only five per cent. of fat, can support combustion, even when in contact with fire, much less when independent of this; yet, from a review of the facts, we are forced to admit it, while denying the spontaneous origin of fire in the human body.

In all of the cases which have been subject to an investigation, proof has been given that the fire caught from burning clothing or other combustible substance; not by the evolution of heat through the chemical action of their own elements, and therefore not spontaneous. Those which have not been investigated have occurred at such a time, and in such a manner as to admit of an easy explanation of the fire from natural causes.

Much stress has been laid on the more or less complete destruction of the body in these cases, without corresponding combustion of surrounding combustible substances—large holes burned in the floor, partly consumed furniture, and so on, without destruction of the building; but this is not infrequently seen in accidental or set fires in buildings, when the supply of oxygen is small. I have seen a case, in which a woman fell in the night, with a lighted lamp, burning oil from which set fire to, and burned through the

³ Medical Jurisprudence, pages 880 and 815.

straw matting and floor. The woman was found in the morning burned to death, as she fell, but the fire had gone out of its own accord. Nearly all of the cases reported have been women advanced in life, very fat, and accustomed to imbibe large quantities of alcohol in some form, and supposed to burn more readily on that account, but it has been found that tissues soaked in alcohol do not burn more readily than others.³

The well-known fact that the consumption of alcohol aids the deposition of fat in the human body⁴ is the probable cause of the more frequent occurrence of combustion in these subjects.

Professor Ogston, in paper mentioned, relates a case in the experience of his father, in which so much alcohol existed in the blood that the serum in the ventricles of the brain caught fire and burned from a lighted match, and he has seen in a death from alcohol poisoning, the smell so marked in the ventricles of the brain that it was possible to ascertain the nature of the beverage used.

He also mentions the experiments of Dr. Beveridge, Pathologist of the Royal Infirmary at Aberdeen, in relation to the combustion of human flesh. He found that when a section having no fat, like muscle, is placed next to the flame, the charring which results is slow, while with the cutaneous surface the cutis is speedily destroyed, and cracking permits liquefaction and flowing out of the subcutaneous fat, which taking fire, quickly reduces it to the condition of a black, greasy substance, resembling cinder. Soaking in alcohol makes no difference as to result, neither accelerating or retarding it. First the alcohol is burned, then the tissue, as if no alcohol had been present.

The number of recorded cases of so called spontaneous combustion is too large, the reliability of the witnesses and reporters too great for us to deny that many bodies have been burned more or less completely after the simple ignition of some combustible substance in contact with the body; yet we know that ordinarily it is very difficult to burn the human body. This is seen in the length of time required to consume the bodies of persons burned at the stake, and in the partly consumed bodies of the victims of accidental fires.

In the celebrated Countess Goerlitz case, in which Stauff was tried for murder, experiments were made by Dr. Graff, for the purpose of ascertaining the amount of heat necessary to effect equal destruction of the body, as was observed in this case, the result of which was, that more than one hundred pounds of wood were required to produce even partial combustion of a human body.⁵

Of the forty-five cases of spontaneous combustion, cited by Dr. Frank, of Berlin, in an article published in 1843, it is only assumed that three took place without the immediate presence of fire, and Liebig shows that these cases are wholly unworthy of belief, and adds in relation to the claim of writers that excess of fat and the presence of alcohol in the body bring about an abnormal condition of easy combustibility, "that hundreds of fat, well-fed brandy-drinkers do not burn when by accident or design they come too near a fire."

From an analysis of all the cases on record up to

1851, Liebig arrives at the conclusion that the great majority agree in the following points:

"They took place in winter. The victims were brandy-drinkers in a state of intoxication. They happened where the rooms are heated by fires in open fireplaces and by pans of glowing charcoal, in England, France and Italy. In Germany and Russia, where rooms are heated by closed stoves, cases of death ascribed to spontaneous combustion are exceedingly rare. It is admitted that no one has ever been present during the combustion. None of the physicians who collected the cases or attempted to explain them, have ever observed the process, or ascertained what preceded the combustion. It is also unknown how much time had elapsed from the commencement of the combustion to the moment when the consumed body was found."⁶

The only reasonable and intelligent explanation of the cases of so-called spontaneous combustion is, that human bodies occasionally possess increased combustibility by reason of an unusual deposition of fat, and that age and spirit-drinking are factors only so far as they aid in fat accumulation. Combustibility exists not in the same degree however, even in fat people. This can be accounted for on the supposition that fat, especially when it exists in large amount, occasionally has lowered vitality — more fat globules and less tissue than normal, thus furnishing more fuel for combustion. We know that the gross appearance of some fat warrants this assumption.

We are told by butchers that in some animals — usually the old and very fat — the fat is harder and has a granular appearance, and in extracting the fat from such, much less residue remains.

In the spontaneous combustion of mineral and organic substances (except that resulting from the action of strong acids, which is immediate), the action is slow, the process before combustion being that of heating from simple oxidation or fermentation.

If we are to admit the possibility of human spontaneous combustion, we can only do so on the supposition that it is a slow process, one of increasing heat passing into combustion. There is no account of this intermediate state ever having been observed, nor has exhumation of the body showed the results of spontaneous combustion. The record of reported cases is that the body is found more or less consumed, having been seen alive only a short time before.

That inflammable gases may be generated from rapid or slow decomposition of the body is possible; but that spontaneous combustion is a mode of death, as was once believed, is not possible, and there can be no such thing as human spontaneous combustion taking place after death, while combustibility must be admitted.

INTERNATIONAL CONGRESS OF DERMATOLOGY. — In connection with the second congress to be held in Vienna, in September, there will be an exhibition of all objects relating to the skin, such as scientific works, drawings, photographs, anatomical preparations, microscopes, instruments, and pharmaceutical preparations. The Minister of Finance has agreed to allow all articles from foreign countries intended for this congress to come in free of duty.

¹ Liebig.

² Virchow, *Hans.*

³ Stillé and Wharton, p. 887.

⁴ Letters on Chemistry, ed. 1851, p. 282.

OBSERVATIONS ON ALBUMINURIA IN SCAR-LATINA.

BY JAMES W. DUDLEY, M.D.,
Medical House-Officer, Boston City Hospital.

FOR a long time scarlatina has been known to be a disease peculiarly liable to renal complications and sequelæ. But only within a comparatively short time has it been considered incumbent upon a careful physician to watch the urine before any manifestations of renal trouble, such as œdema, had occurred. It is now a common practice to examine the urine frequently, not only during the latter part of the disease when severe renal complications are most apt to occur, but also during the earlier part, with a view of recognizing at once any threatening trouble on the part of the kidneys and of averting it if possible.

At the Boston City Hospital it is customary to have the urine of every patient with scarlet fever examined at least every other day from the beginning to the end of the disease. The writer has had the opportunity of doing a considerable amount of this work and has found the results, although made up of rather minute and perhaps somewhat trivial details, yet, it seemed to him, of sufficient interest and importance to record. To the results of the examinations which have been made by the writer have been added the results of the examination of the urine from enough other cases to make a total of one hundred urines examined from the beginning to the end of the disease. It is the aim of this paper to compare the results of these examinations with a view of determining, *first*, the frequency and importance of the albuminuria which sometimes occurs early in the course of scarlet fever, and *second*, the character and frequency of nephritis, with such other facts bearing upon the subject as have been observed by the writer. The slight evidences of kidney irritation spoken of by some authors as *renal catarrh*, which are said to occur without the presence of any albumen in the urine are not generally considered to have any clinical importance and the writer has thought it unnecessary to regard any urine as abnormal unless it contains enough albumen to be appreciable by the common heat test. Most of these urines were examined by the nitric acid test, but the results were confirmed in many cases by the heat test. The term *renal catarrh* has been applied in this paper to a slightly different condition from that referred to above. It should also be said that the urines examined were from *all* the cases during a number of consecutive months, no selection or omission of cases having been made.

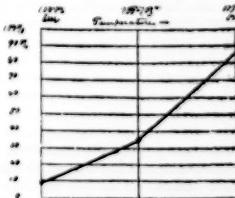
Of the total number of patients with scarlet fever in the hospital during the period covered by these one hundred cases, three died before any specimen of the urine could be obtained. In the following statistics these three cases therefore are omitted as it is of course impossible to say whether there was albuminuria or not. In each of these fatal cases where urine could not be obtained the temperature was high, the lowest being 103° , the highest 104.2° . Cases with suppression of urine in each instance ended fatally.

At some time during the progress of the disease albumen can be found in the urine in about one-half the cases. Out of the 100 there were 49 in which there was found albuminuria to a greater or less degree, 51 being free from albumen from first to last. By far the most common time for the occurrence of

this phenomenon is in the early part of the disease, when the temperature is highest, but high temperature alone cannot account for the presence of albumen as it was noticed in some cases where the temperature was uniformly low. On the other hand a high temperature was not in all cases accompanied by albumen in the urine. Out of 21 cases in which the temperature was 103° or more at entrance (the rash being on the average in its second or third day), 17 cases had albumen, four cases did not; that is 81% of all cases with a temperature of 103° or more, had an appreciable amount of albumen in the urine during the high temperature. This would seem to show that the early albuminuria was, to a certain extent, dependent upon high temperature, or that the too high temperature and albuminuria, have a common cause. We know that in other diseases with high temperature albumen is frequently present in the urine during the height of the fever, and that it should be so in scarlet fever when the same condition is present is not surprising, and in the majority of cases no other explanation seems necessary.

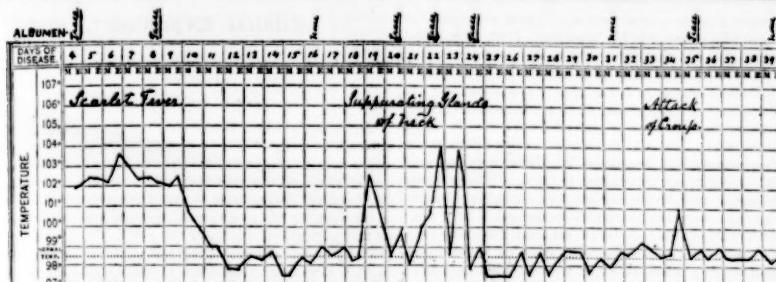
Whatever the cause of the fever, adults are more easily influenced by high temperature than children, and accordingly in this series of cases it was found that in case of all the adults 20 or more years of age who had a temperature of 103° or over (six in number) albumen was present during the height of the fever. In four of these six, the albumen disappeared as the temperature declined without any evidence of nephritis; in the urine of two there were found a few hyaline and granular casts, and in none did the albumen at any time exceed a trace in amount. All of these cases did well.

Dividing the whole number of cases into three divisions according to the height of the temperature at the period of efflorescence, and estimating the percentage of cases having albuminuria in each of these divisions, the same result is obtained, namely, that as a rule, the higher the temperature the more frequent is the albuminuria. This may be seen in the following tracing:



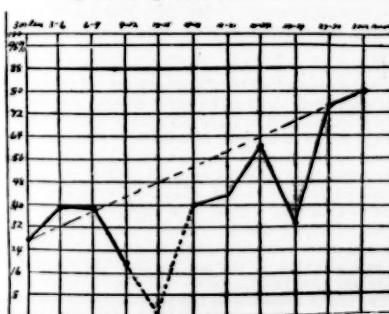
Eight and seven-tenths per cent. of all cases having a temperature of 100° or less had albuminuria; of those with a temperature of 100° to 103° , 36%; while of those with a temperature of 103° or over, 86%. Early albuminuria seems therefore to be, if not the result of high temperature, at any rate an almost normal accompaniment of it and of no prognostic value as regards the subsequent course of the case.

The apparent dependence of albuminuria on temperature in scarlet fever, may be seen in the accompanying chart. The cause of the rise in temperature was a different one at each elevation, but in each instance there was temporary albuminuria. It is not



improbable, however, that the kidneys were in such a condition that their function was easily deranged by a rise in temperature although no serious renal trouble was threatening.

Early albuminuria appears to be more common in adults, whatever the temperature, than in children. Twenty-seven out of the 100 cases were in persons twenty years of age or over, and in 56% of these there was early albuminuria. Of those adults having a temperature over 100°, 75% had albumen, and as stated above, all the adults with a temperature of 103° or over, presented it. Taking the whole 100 cases according to the age of the patients, we find on the whole a pretty steady increase in the proportion of cases with albumen, as the ages of the patients increase. The percentage of cases presenting albuminuria at different ages is graphically shown in the following curve, the horizontal lines marking the percentage of cases with albumen, and the vertical lines the ages of the patients.



Strange to say, there was but one case between the ages of twelve and fifteen, and that case had no albumen. The drop of the curve at that point, therefore, indicates nothing. The cases occurring between the ages of nine and twelve were, with one exception, cases with a low temperature. Those between twenty-four and twenty-seven were also, with one exception, of lower temperature than the average for adults. Albuminuria seems, therefore, to be of much more common occurrence in adults than in children. This cannot be due to albumen being detected in adults as the result of a better appreciation of any change in

the general condition, and attention therefore being directed toward the kidneys, because *all* the urines were examined with equal frequency. It must be taken as a fact, probably due to the greater ease with which children always endure high temperature. It is difficult to see *a priori* why the scarlatinal poison should not affect the kidneys to an equal extent in children and adults, and if the albumen be due to the specific action of the poison on the kidneys, why it is not as common in children as in adults. It must be said, however, that there were a very few cases where there was albuminuria at various times during the progress of the disease not dependent upon high temperature, and apparently to be explained in no other way than as the result of the action of the scarlatinal poison on the kidneys. The writer is not able to say whether some of these few cases may not have had some evidence of renal catarrh, such as casts, which were overlooked, or have occurred as a result of passive congestion of the kidneys from some abnormal condition of the heart, but no case of the sort was noticed. That renal desquamation is not necessarily a predisposing cause of albuminuria is shown by the fact that in two cases, at least, the albumen present during the high temperature cleared up the day that desquamation began.

Albuminuria seems to be rather more common in males than in females. Twenty-three out of the 43 males had albumen in the urine at some time; that is, 53% of the males. Of the 57 females it was found in 27, or 47.4%. The difference between the sexes in this regard seems, however, too small to be of any special significance.

Over-crowding and poor ventilation are said to be fertile causes of scarlatinal albuminuria.¹ It is difficult, however, to see how this cause can have operated in the cases under consideration. The wards are new, very well ventilated, and at no time during the period covered by these cases, contained as many cases as they were designed to accommodate. During the time of the writer's service in these wards, that having the smaller number of patients contained fully as large a proportion of cases with albuminuria as did the other ward which with the same air space, contained the larger number of patients. During the month of March last, when there was an unusually large number of patients in the wards, 43% of the admissions developed albuminuria. During February, also a heavy month, there were 53%. In December, when there were fewer patients, 63%, and in November,

¹ See London Practitioner. 1888, vol. xli, p. 154.

ber, when the clinic was very small, and consequently over-crowding out of the question, 75% developed albuminuria. It therefore seems that over-crowding and poor ventilation have no influence in the production of albuminuria, so far as these cases show.

The question next arises, what are the probabilities of a nephritis occurring as a continuance of the early albuminuria? In adults, where early albumen is most common, this happened in about 14% of all cases. In children it occurred in 20%. These cases of nephritis were of the mildest type in half the cases, and in none were they of a serious nature. The variety of nephritis which is to be especially feared, generally comes later, and does not so far as these cases show, arise as a continuance of the early albuminuria. A temporary nephritis, whose only sign is a few granular and hyaline casts in the sediment, is not to be regarded as a serious trouble. The cases having this variety of nephritis, which might be spoken of clinically as a renal catarrh, in most instances do well, and it is not uncommon for this condition to be present at varying intervals during a considerable part of the illness, without giving the least evidence of its presence, so far as the symptoms, or the appearance of the patient, or the termination of the disease, is concerned. The presence of casts in the sediment indicates some abnormal condition, which, if slight, is generally considered in scarlet fever to be of a catarrhal nature because of the slight pathological changes usually found *post-mortem*, and the frequent epithelial cells from the renal tubules almost invariably found in the sediment. Clinically, at any rate, it does not seem possible in every case to draw a line of distinction between this mild catarrhal condition and a real active nephritis. All varieties and combinations of abnormal urinary elements may be found. The most common variety observed in this series of cases was that containing a trace of albumen (sometimes a very faint trace) and a few hyaline and granular casts, with an occasional leucocyte and a few renal epithelial cells. It is this very mild form of renal affection which has been spoken of above as renal catarrh. Another combination observed was hyaline and granular casts and a few blood globules, with a trace of albumen; another, hyaline and epithelial casts, free blood and trace of albumen. All degrees were found between these and the severe and typical parenchymatous nephritis having a large amount of albumen, $\frac{1}{2}$ to $\frac{1}{2}\%$, free blood and renal cells with hyaline, granular, epithelial and blood casts. What is true of the albumen and sediment is also true of the specific gravity, daily quantity and appearance of the urine. In fact, scarlatinal nephritis cannot be said to have any type of its own, and the only practical criterion which we can make as to the presence of nephritis, seems to be the occurrence of casts of one variety or another in the sediment of a urine containing albumen.

(To be continued.)

PRESERVATION OF MEAT FOR TEN YEARS. — A gentleman in New York has recently tested the result of preserving a turkey in a refrigerator for ten years. This time having elapsed, the fowl was removed from the refrigerator and after being properly cooked was eaten by a party of gentlemen. While putrefactive changes seem to have been entirely absent it was found that the meat was practically tasteless.

Clinical Department.

A CASE OF LAPAROTOMY FOR OVARIAN DISEASE.¹

BY R. A. KINGMAN, M.D.

THE case which it is my privilege to report before you this evening is chiefly of interest by reason of two rather unusual features, the first relating to the shape and location of the principal tumor, thus complicating the question of diagnosis,—the second having regard to the smaller tumor and raising questions of prognosis and perhaps of etiology.

The patient was very kindly referred to me by Dr. Samuel Breck, who assisted in the examination and coincided with me in the diagnosis and in urging immediate operation.

S. K., single, aged thirty-eight years, born in Ireland, three years in this country, during which time she has done heavy work as a hotel laundress. Her father died of "kidney disease." She has suffered from no previous disease of consequence. Two and a half years ago she noticed a small swelling in the lower abdomen at the right of the median line and the whole abdomen seemed somewhat sore. Since that time there has been a gradual increase in the size of the abdomen, which has been more rapid during the past four months.

Her first menstruation appeared at thirteen years of age. At first it lasted a week and was profuse, but after a year it ceased for three or four months and since that time has recurred regularly at an interval of from three to four weeks, lasting four days, without pain, and soiling only four napkins. The last appearance was two weeks previous to the date of the operation. Her appetite has been fair, but the process of digestion is accompanied with occasional discomfort. The bowels are regular. No abdominal pain is experienced, but rather a sense of distension and oppression.

Examination revealed an abdomen distended rather more than at the full term of pregnancy. The abdominal wall, particularly at its lower margin, was markedly edematous. The sense of fluctuation was distinct though not so striking as in ordinary ascites and was absent in the flanks. On each side, just above the iliac spines, was noticed a sense of greater resistance, which yielded before the examining fingers like the head or breech of a child in a uterus containing an excess of liquor amnii. Dulness was complete to a point above the umbilicus, and extended much higher on each side than in the median line. In the flanks there was good resonance.

The uterus could not be felt bimanually; the cervix was crowded somewhat forward, and in Douglas's pouch was felt a rounded mass which was supposed by Dr. Breck and myself to be the sharply retroflexed body of the uterus. The urine had a specific gravity of 1040, was acid, yellowish-gray in color, copious precipitate of urates, no albumen. The legs were edematous at night, but this fact she had noticed for only two weeks.

A diagnosis was made of a multilocular cystic tumor of the ovary, possibly accompanied by ascites, in which case the latter was supposed to be encysted by adhesions. Owing to the marked edema of the abdominal

¹ Read by invitation, before the Obstetrical Society of Boston, December 12, 1891.

wall, malignant growth somewhere within the peritoneal cavity was feared.

After the customary preparation for the two preceding days, the operation was performed at St. Elizabeth's Hospital, on Saturday morning, November 21st, Dr. F. W. Johnson assisting at first, and later Dr. Breck. Asepsis of hands and arms was secured by the use of permanganate of potash, oxalic acid and corrosive sublimate; asepsis of instruments, ligatures, sutures and dressings by exposure to heat.

In incising the peritoneum there escaped fourteen pints of clear amber-colored serum. As the abdominal walls collapsed, there developed a peculiar appearance, two distinct, rounded tumors, elevating the parieties just below the ribs on each side, and strongly resembling a pair of well-developed breasts. On introducing the hand, these were found to be cystic and to be joined at the median line, where they rode the vertebral column like a pair of old-fashioned saddlebags. From this point of union a slender pedicle extended some five or six inches to the left corner of the uterus. The cysts, which were multilocular on both sides, were evacuated and removed, no adhesions being encountered. The contents consisted of a fluid strongly resembling dilute pus, thirty-six ounces flowing out through the canula besides what escaped into the abdominal cavity and around the wound.

In the pouch of Douglas was found a soft papillomatous growth, extending wholly across the pelvis and pressing the uterus forward. At first it was feared this could not be removed, but it soon appeared that the adhesions were neither many nor strong, and that the growth sprang from the right ovary only. It was rapidly separated from its peritoneal adhesions, lifted out of the wound and tied off close to the uterus.

In emptying the cysts part of the fluid found its way into the abdominal cavity, where it was diluted by the ascitic fluid, a part of which had intentionally been left for this very purpose. On the completion of the operation, the abdomen was flushed out several times with hot salt solution, a glass drainage-tube was carried to the bottom of Douglas's pouch and the wound was closed with silver-wire sutures. A dressing of powdered boracic acid, baked gauze and baked cotton was held in place by adhesive plaster and a binder, and she was placed in bed.

She rallied well, had little vomiting and made an uneventful recovery. The first efforts at vomiting caused quite a copious discharge of fluid, slightly tinged with blood, from the drainage-tube, but on sucking out the tube every hour very little was removed. During the night the flow increased so that the tube was sucked out every half-hour. After three days the tube was removed and the same afternoon the bowels moved freely with the help of citrate of magnesia.

Part of the stitches were removed on the eighth day, the remainder on the eleventh day.

Present condition, three weeks after operation: Wound perfectly healed. No pain or tenderness anywhere, patient feeling perfectly well. The uterus is in a position of left latero-version, moderately enlarged. There is a little fulness in Douglas's pouch, not hard nor sensitive, but giving the impression of exudate about the track of the drainage-tube, or of a slight increase of the papillary remains left at site of the severed adhesions. Temperature 98.6°, pulse 70.

The two questions of interest I have already suggested are the only ones I will touch upon, for it is

my purpose to-night merely to report the case with little of note or comment. In connection with the cystic tumor it is to be noted that owing to its broad bifurcation, it so rode upon and held down and back the intestines, that in spite of the presence of a large amount of ascitic fluid there was resonance in both flanks, dulness over the whole front of the abdomen to a point well above the already elevated umbilicus, and absence of fluctuation low down on the sides of the abdomen. In this mass of fluid the floating cysts, buoyed up by the intestines, moved freely under the hand so adding to the difficulty of accurate diagnosis.

But the second and smaller tumor is of far more importance for purposes of discussion. The data easily within our reach concerning papillomatous growths in the pelvis, with infection of the peritoneum, are scarce and not very satisfactory. The general impression is that while not in themselves malignant, they are liable upon the slightest provocation, or even without special cause, to undergo malignant degeneration. Even though, as in this case, the tumor proper can be readily and completely removed, yet the peritoneal adhesions may serve as foci from which proliferation may occur, to be followed sooner or later by cancerous or sarcomatous degeneration. Whether it is better in these cases to scrape the points of infection as clean as possible and promptly close the abdomen, or whether keeping the wound open and packing the pelvis with iodoform gauze offers a better chance of cure by encouraging suppuration and cicatricial starvation of the growth, is a question for consideration. Is the disease bound to return and cause death, or is there a chance of gaining a complete cure? Of the latter, how can we make the result more sure than by the method practised in this case?

The pathologist's report just received this evening from Dr. F. B. Mallory, is as follows:

"A papillomatous mass from right ovary, size of fist; several small cysts present in base; probably a ruptured papillary cystoma. Mass from left ovary contained two large cysts and a number of small ones. Portion of outer wall of large cyst thickened and in places covered with small papillary masses. These were probably originally within a cyst which has ruptured. Inner wall of cyst studded with numerous papillary projections of varying size."

"Microscope showed papillary masses covered with a single layer of cylindrical epithelium. The papillary masses themselves are in some cases very cellular and made up of spindle cells; in others they are more fibrous; the larger proportion, however, are composed of branching cells separated by clear, translucent material, suggesting Wharton's tissue. The papillary masses in many places, on account of their delicacy and manner of branching, resemble chorionic villi."

"Diagnosis — Papillary (myxo-sarco) cystoma."

"Prognosis bad."

THE ALVARENGA PRIZE. — The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about one hundred and eighty dollars, will be made on July 14, 1892. Essays intended for competition may be upon any subject in medicine, and must be received by the secretary of the College on or before May 1, 1892. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college.

A CASE OF PAPILLOMA OF THE OVARY AND
FALLOPIAN TUBE.

BY C. M. GREEN, M.D.

THE patient, aged twenty-seven, was first seen in April, 1891; the right tube was somewhat enlarged and tender and there was an endocervicitis of long standing: the ovaries were apparently not enlarged. When seen early in July, before going away for the summer, the patient was generally improved; but the condition of the right tube was unchanged. Three months later, when next the patient was examined, it was found that the right ovary was enlarged to the size of the fist: it was thought by Dr. George Haven and myself that the ovary was cystic, and operation was advised. Dr. Haven kindly performed laparotomy for me November 6th, and to our surprise, when the abdomen was opened, we found a papillomatous mass, the size of the fist, involving the right ovary. Neither the parietal peritoneum, nor adjacent organs were apparently at all invaded: the broad ligament was tied off and the entire growth and the right Fallopian tube were removed.

Dr. F. B. Mallory, of the Harvard Pathological Laboratory, kindly examined the specimen and reported:

"The papillary growth probably originated in a cystoma which has ruptured, and of which the wall has disappeared. There is a very reasonable hope in this case of non-recurrence."

The patient made a non-febrile convalescence until the eleventh day when there was an attack of pain, following a movement of the bowels, with some elevation of temperature: and for several days there was fever, and pain in the right inguinal region. The temperature suggested pus; ether was then given with the expectation of locating the trouble and perhaps aspirating; but examination revealed a hard, non-fluctuating mass to the right of the uterus, as large as the fist nearly. Finding no evidence of abscess, nor, at all events, of pus within easy access, it was decided to wait: the next day, there was a discharge from the vagina of a sero-sanguinous fluid containing thick, white, cheesy material; the mass disappeared and the patient made a speedy convalescence. What this mass, or effusion, was, neither Dr. Haven nor I have been able to assure ourselves.

The points of interest in this case are the rapid development of the papillomatous growth, the unexplained effusion occurring as late as the end of the second week, its complete disappearance, and finally the question of recurrence. Thus far the patient has been quite well, and subsequent developments will be awaited with interest.

Medical Progress.

RECENT PROGRESS IN LEGAL MEDICINE.

BY F. W. DRAPEK, M.D.

PREGNANCY AND DELIVERY; ABORTION; INFANTICIDE.

Unconscious Parturition in a Primipara.—Brunon¹ reports a case of more than usual medico-legal interest. It related to an intelligent, healthy married woman, twenty-two years old, at the end of her first pregnancy. She had a troublesome cough which was attended with

¹ *Jour. de Med.*, April 19, 1891; *New York Medical Journal*, June 27, 1891.

some pain in the lumbar region. This pain increased somewhat but not to a degree to suggest to the woman, or her family, that medical aid was required, but rather that it would be relieved by defecation. She remained an hour in the water-closet, and then went to bed with her lumbar pain decidedly less. An hour and a half later, there was a renewal of the desire to go to stool, with pain in the loins such as she had felt before when constipated. As she rose from her bed and brought her thighs together in the act, she was prevented by an obstruction which, upon examination, was found to be the head of her infant protruding from the vulva. At no time had the question of parturition occurred to her, and her first intimation as to what was going on was when she touched and saw the child's head between her thighs. The patient was a woman of calm temperament and good health and belonged to the cultivated class. There was nothing in her antecedents that would have any bearing upon this nearly painless labor. There was no abdominal colic at any time, there were no terminal expulsive pains, which are usually so severe; in fact, the only evidences of the process of parturition were the lumbar pains, the feeling of weight in the rectum, and the illusory desire to defecate.

Air Embolism.—Hektoen adds a case to the rather limited series of illustrations of sudden death by the introduction of air into the circulation through ruptured uterine veins.² The patient was a woman of nineteen years, married seven weeks before her death, but pregnant in the fourth month. She was in good health, except that she had occasional attacks of headache and vomiting. She went to her bedroom for the alleged purpose of changing her dress. After she had been in the room about ten minutes, the noise of a fall was heard. Her husband at once entered the chamber and found her lying on the floor with her head against the wall; beside her was a Davidson's syringe, a chamber-vessel and a basin of cold water, all arranged in such a way as to suggest that she had commenced to take a vaginal douche or was about to do so. Her husband placed her on the bed and then found that she was dead. All this transpired within twelve minutes.

The autopsy was made twenty-four hours later. There was no sign of decomposition. There was no sign of violence about the external genitals, and there was no blood or other fluid in the vagina. The uterus was enlarged so as to fill the pelvis. The right ventricle and auricle contained bloody froth; the left ventricle was empty. The lungs were congested and edematous. The veins in the abdomen contained interrupted columns of blood and air. Within the cavity of the womb were two or three fluid ounces of blood. At the inferior border of the placenta a separation had occurred to the extent of about three-quarters of an inch. Within this portion of the uterine wall were seen the openings of many ruptured sinuses. The other organs, the kidneys, liver, spleen, stomach, intestines and brain, presented nothing abnormal.

A Case of Infanticide with Rupture of the Spleen.—Coutagne, of Lyons, reports the following instance of rupture of the spleen in an infant.³ A woman, twenty-nine years old, was delivered of a living child on the 17th of September; on the 27th of the same month she threw the child from a wharf, intending that it should be drowned in the river below. It was killed

² *North American Practitioner*, March, 1891.

³ *Bulletin Gen. de Therap.*, September 13, 1891.

by striking upon the edge of the stone wharf-pier, which had arrested its fall. The autopsy discovered some head injuries; but the most important lesion was a rupture of the spleen. In the abdominal cavity were 150 grammes of blood. The splenic region was the centre of a collection of large clots. The spleen was of normal consistence and color; it weighed 17 grammes; on its outer surface, at about the middle, were three large transverse rents, joined by a fourth vertical fissure; two of these lesions involved the entire thickness of the organ, extending through to the capsule on the inner surface. There was a subcutaneous ecchymosis of the size of a small pea, but no other injury to the left hypochondrium. The ribs were intact. The supposition that the injury was the result of a direct blow over the spleen seems to M. Coutagne to have been demonstrated by the small size of the organ, its mobility and its protection under an osseous covering, which in infancy is endowed with special elasticity.

IS A MALIGNANT PUSTULE A DISEASE?

A man living in Iowa had been, for some time before his death, insured against bodily injuries, in a sum not exceeding five thousand dollars, by a Mutual Accident Association of New York City, the condition of the insurance being that the bodily injuries should be the result of external, violent and accidental causes, and not of disease. He had been in Iowa but two months when his death occurred, and a claim was at once made against the company for the full amount of the insurance benefit. It appeared that in some unknown way he became the subject of a malignant pustule on the lip, and that this was the sole cause of the death. He had been a bookkeeper in a meat market, and, later, a clerk in a railroad freight office. Car-loads of hides frequently passed the railroad station where he was employed, and a large number of cattle were slaughtered in the neighborhood: but there was no direct proof that he ever came in immediate contact with the hides or with the animals. Yet it was claimed by the plaintiff, in the suit brought against the insurance company to recover the sum above named, that the pustule from which the insured died was the result of an external injury accidentally received; it was not a disease but an accident. In support of this proposition some elaborate expert testimony was introduced. The leading medical witness stated that malignant pustule is not a disease, in the strict sense of the term, but "a pathological condition of the system," caused by the accidental inoculation of "diseased" or putrid animal matter, infested with bacteria or anthrax bacilli, upon the thick skin of the lip, whence the bacilli multiply and are diffused through the system." The animal virus that produces the sore comes from the hides, hair, wool or flesh of animals suffering from anthrax, and it may be transmitted to human beings by direct contact, or it may be conveyed by insects and implanted upon some exposed part of the body. The witness admitted that there had been some "epidemics" of this "pathological condition" in this country.

The defendant company claimed that the disease which caused the death in the case at issue was a carbuncle; and, in any event, whether it was the result of a carbuncle or of a malignant pustule, the death was by disease and not from accident. In behalf of this view, more expert testimony was taken, Dr. Prudden, the distinguished bacteriologist, being among the witnesses.

The judge instructed the jury that if the cause of the death was a carbuncle, the plaintiff could not recover his claim; but that if it resulted from a malignant pustule, his claim was recoverable. The jury returned a verdict against the company. The case was carried to the Court of Appeals; the judges of this court were divided in their opinion, five of them declaring that the evidence of the physicians called for the plaintiff showed clearly that death from malignant pustule was regarded generally by medical authorities as death from disease; that "accidents" cannot be "epidemic"; and that "a pathological condition," which is not a "disease," offered an insufficient basis for an insurance claim against an Accident Insurance Company; two of the seven judges dissented from this view and held that "the infliction of animal virus by some exterior force or power was a bodily injury effected through external, violent and accidental means."

Lowell, who reports this case,⁴ suggests that if the position of the minority of the judges be correct, in this instance, it would be equally correct if applied to a person who should pass through a hospital where there were cases of scarlet fever or small-pox, and should contract fatal infection thereby. He might go further in his suggestion and include the "accidents" which the contagium of syphilis or the bacilli of tuberculosis or the micro-organisms of other "pathological conditions," generally called infectious diseases, bring about.

PROCREATIVE ABILITY AFTER CASTRATION.

Massazza reaches the following conclusions as the result of some experimental researches undertaken in the laboratory of legal medicine at the University of Pavia:⁵

(1) Castration does not immediately deprive an animal of *potentia coeundi*.

(2) One can find, for some time after removal of the testicles, normal spermatozoa in the efferent ducts and in the seminal vesicles.

(3) These spermatozoa do not always retain their fecundating power.

(4) Only those zoosperms are fertile which preserve their characteristic movements, or which can recover those movements by a special treatment.

(5) If one finds in the liquid withdrawn from the efferent ducts or the seminal vesicles zoosperms with the body detached from the tail, he may conclude that all the spermatic filaments are dead.

(6) The fecundating power of zoosperms found in the seminal passage of animals castrated does not continue more than nine days after the operation.

(7) If one applies to the human subject the results demonstrated in animals, one may conclude that the activity of the zoosperms lasts a short time only, and does not extend beyond the ninth day after castration.

(8) As it is probable that a man who has just been mutilated by castration will hardly feel capable of sexual intercourse during the nine days which follow the operation, the procreative potency of men who have been thus deprived of both testicles may be absolutely denied with confidence.

IS STERILITY A DISEASE?

Mr. Justice Holmes, of Dublin, has made a decree of much interest to medical men to the effect that ster-

⁴ Brooklyn Medical and Surgical Journal, June, 1891.

⁵ La Riforma Medical, February 9, 1891.

rility is not "sickness" within the legal sense. A suit was instituted by a Dublin physician to recover fees to the amount of nineteen guineas for attendance upon the wife of a solicitor. The lady, it appeared, suffered from no other disease save sterility, but anxiously desired a cure for this disability, and sought advice with this object in view, whether with or without the knowledge and consent of her husband did not clearly appear. The physician attended and made many examinations and sundry applications of sponge tents and other instruments, for the purpose of dilating the cervix uteri. The lady's husband refused to pay the gynecologist's bill, on the ground that the treatment of his wife for the cure of sterility was not a "necessary" for which the law required him to pay, and on the additional ground that the medical attendance was without his, the husband's, knowledge or consent. The law laid down by the judge in his charge to the jury was as follows: (1) Every man is bound to provide necessary medical care for his wife in case of sickness. (2) Every husband is liable for payment of fees in case of such sickness, whether he knows of the attendance on his wife or not. (3) But sterility is not a sickness for the treatment of which a husband can be made liable; it does not shorten life, or prevent the discharge of household duties, or cause physical pain. Therefore medical attendance for the cure of such a condition is not a "necessary" within the meaning of the law, and the physician in this suit could not recover the fees charged. It should be added, however, that he could still recover against the separate estate of the wife, if she had any, for "work and labor done," though the "work and labor" might not be legally "necessary" as against the husband.

Reports of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

MEETING of January 5, 1892, the President, DR. L. C. GRAY in the chair.

THOMSEN'S DISEASE.

DR. C. L. DANA exhibited a male patient, thirty-three years of age, who presented the typical phenomena of this disease. The family and personal history of the patient were good. There was no specific trouble, and no previous nervous disturbances. The first symptom noticed was a weakness of the muscles, which came on at the age of seventeen. Three years subsequently it was found that, when the fists were closed, they could not be opened again, voluntarily, for some little time. These conditions had increased until at the present time, the only muscles not involved in the process were those of the thighs and upper arms. The myotonia was most marked in the muscles of the forearms and legs. No contractions of the pillars of the fauces were observed. There were no sensory disturbances. Reflexes were nearly abolished and could only be obtained by reinforcement. There was slight increase of reaction, to the galvanic current but not to faradic. The author felt convinced from very careful tests of the muscles that the phenomena were confined to the muscles themselves and that it was not due to a reflex influence, but that the disease was a purely muscular one.

PERIPHERAL NEURITIS, OR POSSIBLE LESION OF THE POSTERIOR NERVE ROOTS.

DR. W. M. LESZYNISKY presented a patient with the following history: A woman, fifty-three years of age, while trying to raise a heavy weight, injured the shoulder-joint. Neuritis of the brachial plexus developed within a few days. When she first came under treatment nearly six months after the accident, she was suffering from extreme pain and tenderness in the course of the median and musculo-cutaneous nerves. There was no circumscribed paralysis but a general weakness of the entire limb. The pain was relieved by treatment. Within two weeks the entire extremity gradually reached a condition of complete anesthesia, including loss of muscular sense. Subsequently the adductor pollicis and the flexor longus pollicis became paralyzed. This paralysis had disappeared, however, within ten days, and simultaneously, there was a restoration of all forms of sensibility, including the muscular sense, over the thenar group of muscles and the entire thumb, the rest of the limb remaining anesthetic. There was diminished faradic irritability in the thenar, hypotenar and interossei muscles. Any hysterical element could be excluded. He thought the diagnosis rested between a peripheral neuritis affecting the sensory nerve branches, and a possible lesion of the posterior nerve roots.

DR. MARY PUTNAM JACOBI did not see why Dr. Leszynsky was so positive in excluding hysteria as the probable cause of the condition in his case. The distribution of the anesthesia was such as one might expect in an hysterical patient. Because there had been no other exhibition of any recognized symptoms of hysteria, did not exclude the disease in such a case as just presented.

SPASMODIC SCREAMING.

DR. J. A. BOOTH presented a patient aged seventy-three years, a peddler by occupation, who had been under observation in the Nervous Department of the Manhattan Eye and Ear Hospital for the past four years. He had also been a frequent visitor to the various clinics in the city. The patient had enjoyed good health, well up to nine years ago; about that time after one week of great headache, he had an attack of left hemiplegia with disturbance of speech. He was ill in bed fourteen weeks, and during this time had suffered intense and constant pain in the head. The paralysis had gradually improved; the disturbances of speech had disappeared, and he had returned to his business of peddling one year after the attack. Ever since the onset of illness he had had more or less head pain, localized over the right parietal region, and which he had described as appearing in a spasmodic manner shooting up to that portion of the head. The attack was ushered in by a flexion of the ring and middle fingers of the right hand, the other fingers being straight, the whole hand was then rapidly rotated, the attack culminating in a loud scream and the placing of the hand on the right side of the head. He had also complained of not being able to sleep, and his wife had corroborated this statement by adding that he was a nuisance to her and the neighbors by these attacks of screaming at night. These paroxysms could also be brought on apparently, by suggestion, although the speaker had never been able to get the patient under the hypnotic influence. After going over the case carefully, Dr. Booth was inclined to believe that

at the present time the patient was more of a simulator than anything else.

DEBATE ON THE THERAPEUTIC VALUE OF HYPNOTISM.

DR. L. C. GRAY said that his object in calling for such a discussion was to ascertain the consensus of opinion of the New York Neurologists in regard to the value of hypnotism therapeutically. He did not want to hear any historical data on the subject, but the personal experience of those who had given the matter serious attention.

DR. DANA referred briefly to the work of the late Dr. Beard, as being the only contribution made by an American author on this subject. From a long series of experiments that writer was convinced that hypnotism was a real condition and not a myth. He was not able, however, to produce partial states of hypnosis, although he attached some value to suggestive therapies. The speaker had been able to produce complete hypnosis in fifteen per cent. of the cases submitted for experiment, and only a partial state in from thirty to fifty per cent. As to its value as a remedy in any of the known neuroses, it was doubtful if it had any efficacy. There were many therapeutic measures which were so much easier of application and which possessed recognized virtues, that it seemed to the speaker unwise to exchange them for something with such subtle power, and so difficult of control, as was hypnotism. Taken altogether it was a remedy that could rarely, if ever, be used with benefit.

DR. G. W. JACOBI said that he had been through two epidemics of hypnotism. The first, lasting from 1880 to 1884, and the second in 1888. In order to ascertain just what position he occupied in regard to the value of hypnotism as a therapeutic remedy, it was necessary for him to review his work in this direction. From old note-books he had found a record of nine cases marked cured, in which hypnotism had been the remedy. In following out the further histories of these cases, which were of various forms of hysterical neuroses, it was found that in all and every instance there had been relapse of the trouble. This result had no doubt been the cause of the author abandoning hypnotism as a therapeutic agent. While it might possibly be good for some subjects, and for the control of some symptoms temporarily, why should we use a method that was laborious and surrounded by mysticism and charlatanism, when other remedies had to be ultimately resorted to anyway. The only way in which any conclusion could be arrived at in regard to the therapeutic value of hypnotism was by means of statistics, and these, so far, had been more or less unreliable.

DR. VOUGHT described the method of producing hypnotism as employed at the Vanderbilt Clinic. Some bright object was held before the patients' eyes and at which they were told to gaze, while the physician encouraged them to try and sleep. Such means had rarely failed to produce the desired hypnotic condition. In no instance was bad effect observed to follow its use; in some a slight pallor came on, but nothing of further consequence. The therapeutic application of hypnotism was successful in most of the cases, such as neuralgias and persistent pain. The speaker thought that it was to be recommended in this class of cases.

DR. E. D. FISHER said that so far as his experience and personal observation went, he was not favorable

to the use of hypnotism as a therapeutic remedy. He had not, as yet, seen or heard of any permanent successful issue from such procedure. He thought that it might also be a dangerous measure in many cases, especially in certain mental conditions. At any rate, if hypnotism were to be used at all it should be only with the greatest precaution.

DR. J. W. COLLINS has used hypnotism in thirteen cases and was able to report cure in five of these. It was not his practice to use the remedy promiscuously, but when he had decided that the case was suitable for hypnotism he had carried out the system of mental suggestion, and was able to get quite good results from it. While he did not claim that hypnotism was a panacea for all nervous diseases he was satisfied that it possessed therapeutic value in certain cases. He thought that it was a great mistake to say that patients were non-hypnotizable if they did not succumb to the influence in a short time. He had seen the masters in this branch, at work at a patient for one, two and even three hours, in some instances, before they could be brought under the hypnotic influence. He did not want to appear as an enthusiastic advocate for hypnotism, but he was convinced that it had a field in certain psychical conditions and especially in moral perversions. Considering the fact that the present method of dealing with these cases offered but little in the way of cure, there should be no hesitancy in at least giving hypnotism a fair trial and not being satisfied with simply an attempt or two, but persisting until such a condition of the patient was brought about, so that mental suggestion could be responded to. If carried out consistently the author was sure that hypnotism would offer more as a moral educator than any other measure that had ever been advanced.

DR. LESZINSKY thought that the length of time that it took to get the patient under the hypnotic influence was a matter of indifference. As yet, there were no statistics to show the bad influence of hypnotism, but in cases where the author had failed to produce hypnosis the patients had been left in an uneasy, uncomfortable state. He did not think hypnotism by any means devoid of danger. He described the case of a child twelve years of age, whom he had treated for hysterical attacks of laughing and crying. She had improved very much under ordinary attention and finally passed out of the author's hands. Some time subsequently there was a slight return of the trouble and the mother took the child to some one who tried hypnotism, the first attempt being unsuccessful but was persisted in until complete hypnosis was brought about three or four times. From this time on all of the symptoms became exaggerated and when the author saw the patient again she had developed all of the phenomena of hysteria. He felt satisfied that hypnotism was responsible for the deterioration in the nervous tone and the development of hystero-genic zones. It had been two years since he had practised hypnotism. The last patient upon whom he had tried it was suffering from singultus, during the hypnotic state the spasm was abolished; suggestion at this time that the paroxysm would not return when consciousness was restored, proved failure, as the spasm had returned in an aggravated form. As for hypnotism being applicable in insanity it was thought rather doubtful that it could be done at all, for the reason that the degree of concentration necessary could not be obtained in this class of patients.

DR. BOOTH had, during the past four years, made use of hypnotism in twenty-four cases, fifteen females and nine males. Of the fifteen females, ten were easily hypnotized and responded to suggestion, in five no hypnotic effects were produced, although repeated attempts were made. Of the nine male cases six were failures. The histories and treatment of four cases were then read in detail. Case I. A young girl, aged seventeen years, suffering with tremor of the left upper extremity, was hypnotized daily for one week, during which séance, proper suggestion was made. At the end of that time the tremor had entirely disappeared and had not returned a year after treatment. Case II. Hysterical attacks in a girl, aged nineteen years. She was easily hypnotized and was markedly lethargic going into a deep sleep from which it was difficult to arouse her, either by suggestion or stronger measures. Subsequent séances did not produce such marked effects and were successful in lessening the number of attacks. One attack only had occurred during the past year. Case III. Double ptosis. The patient was easily hypnotized and after fourteen séances there was marked improvement. Case IV. Another patient with hysterical attacks, which were ultimately cured by hypnotism.

DR. B. SACHE had not been able to do much with hypnotism, and as yet had accomplished nothing therapeutically. He had tried the method in cases of hystero-epilepsy and where persistent pain had existed for years, in every instance the therapeutic effect was absolutely nil. The only two cases in which a certain amount of benefit seemed to be derived from hypnotism, were of nerve-deafness occurring in two young women. The improvement continued during four weeks in one case, and three months in the other. He thought, however, that hypnotism, as far as any real therapeutic value was concerned, was only a fashion at present and that it would soon be laid on the shelf.

DR. JACOBI described a case which had recently come under her observation, the course of which, possibly bore some analogy to the way in which hypnotism operated upon the nutritive states through some controlling mental emotion. The patient, a woman of emotional characteristics, had complained of severe pain in the shoulder-joint. There was present much swelling and anesthesia. Despite all treatment the condition had increased in severity. After the tenth day hysterical attacks of screaming came on, followed fourteen days after the onset of the trouble, by considerable vomiting of blood. About this time the patient's child had become dangerously ill and had died in a few days. From this time on all her symptoms connected with the shoulder and the general condition had gradually subsided and finally disappeared. Health in a short time was completely restored. The speaker thought this was a clear case of great mental emotion having the power of re-organizing and controlling the nutritive states, as shown in the rapid recovery when the mind was concentrated on the illness and death of the child.

DR. L. C. GRAY had practised hypnotism since 1886 upon hundreds of cases in his hospital wards, but had finally given it up in this class of patients, as he had found that it had a demoralizing influence and that moral control over them was lost by persisting in its use. In some cases where he had tried hypnotism he had found that his patients would leave him and go to some one else. He thought, however, that in the present study of hypnotism we were only on the verge

of a great developmental knowledge of psychical laws which might prove to be of great value. From his experience in the use of this agent as a therapeutic measure he was not able to say in what class of cases or individual case that it would, or would not, be beneficial. If he could draw any deduction he would say, that the hysterical cases offered the best results. No one understood the nature of hysteria any way and there were no conclusive criteria by which hysteria could be diagnosed, but in the symptoms laid down as such, hypnotism had produced some amelioration although relapses had occurred. In functional symptoms such as delusions of fear, fright and timidity and so forth, good results were obtained by hypnotism. In other neuroses such as neuralgias and organic diseases of the nervous system, the benefits were not as good as from other known remedies. The author had never been able to hypnotize an insane patient and in the paranoiac the practice had filled these patients full of delusions. Altogether no good results were obtained in these two classes of patients, but much harm in the latter. There need be no difficulty in hypnotizing patients, if it could not be done in one way it could be done in another. The author had found that where a patient was hard to get under the influence they were apt to sink into coma afterward. He had such a case where the patient when observed some time after being hypnotized was almost in a comatose state and was very ill for the remainder of the day. He had never heard of a death being produced by hypnotism, but did not think it unlikely that it might happen. He would not, however, condemn hypnotism until it had a further and more conscientious trial.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION IN OBSTETRICS AND GYNECOLOGY.

GEORGE HAVEN, M.D., SECRETARY.

A MEETING of the Section was called Wednesday, December 28, 1891, to elect a Chairman and transact such other business as might come before the meeting.

DR. C. M. GREEN was unanimously elected Chairman, and upon assuming the chair said: The history of this section is somewhat interesting. It has had spasmodic meetings at times, and many of the meetings that have been held have been very profitable and satisfactory. I have served myself, as secretary of some of the other societies, and I know how difficult it is to get material for papers, and to find men who are ready to come and talk and bring specimens. I can see no reason why we should not have an active working section in this department. There are other societies in Boston; but Boston is a large city. Other societies do not absorb all the material of the city, and there are a good many members of the Suffolk District who are not members of some of the special societies, so that there is no question in my mind but that there is ample material to make this section a success, provided the members will co-operate with the officers of the Society to make it such. It is very hard for a secretary or presiding officer to go to members and beg them to write a paper, and I hope that the members of the section will be willing to come forward and offer to read papers.

I suppose the meetings will be held once a month. We ought to select the evening for meeting, to-night.

Upon motion of DR. E. W. CUSHING, the section voted to meet hereafter on the second Wednesday of each month.

DR. GREEN: Of course, the work of the section will be chiefly the reading of papers. It has always seemed to me that a good deal of valuable work might be done in the way of discussions. There are a good many members who have not the time to prepare a set paper, but who would be very glad to come and discuss a subject that might be selected. It seems to me that that would be one very profitable method of spending our time; possibly a paper at one meeting, and discussion at another on some broad subject. It is to be hoped that members who have pathological specimens will bring them.

It has seemed to me that the mere presence of the reporter and the fact that whatever one says is to be printed, deters some of us from saying anything. I look upon publication to some extent as being a positive injury to the well-being of medical societies. I have often hesitated from saying something I would have rather liked to say, because I did not want to take the trouble to correct the proof. We need not have anything more appear than we want to, and each member can cut his own remarks out if he does not see fit to revise the report.

DR. E. W. CUSHING: Dr. Price has written me that if this section is organized he will accept an invitation to come here and give us a paper on tubal pregnancy, as he has had over sixty-five cases on which he has operated. It seems to me if we could have subjects for discussion beforehand it might obviate the difficulty of getting papers.

Dr. Cushing then showed a

CANCEROUS UTERUS REMOVED BY HYSTERECTOMY.

I thought it would be interesting, owing to an obstacle. The operation of vaginal hysterectomy where there is no obstacle is so easy and so well defined that there is very little to be said about it, but every once in a while a case occurs where there is difficulty in making the diagnosis and performing an operation. This specimen was from a lady sent to me by Dr. Sanford, of Everett. The disease was noticed last July. A specimen was sent to Dr. Whitney who pronounced it cancer. I saw her on Saturday, and operated last Monday. On examination, the disease seemed limited. The uterus could be freely moved up and pressed down without ether, but when it came to operating the growth would not come down, and I at first thought it might be owing to impaction of the broad ligaments; but the ligaments seemed reasonably free from disease. The contour of the uterus could not be accurately made out. On opening the cul-de-sac of Douglas, the uterus would not come down. When I had severed so much of the broad ligaments that the uterus should have come down, it could not be retroverted. Reaching the finger far up I found quite a mass. I made out that the mass was on one side of the uterus, and by tying the ligament on the other side I was able to slip it out sideways, and found this fibroid tumor in the fundus, that being the principal point of interest in regard to the case.

In regard to the performance of the operation I feel a little more free to speak in this section than in a general section. I have been taking a good deal of interest in the question whether to operate with clamps or with the ligature. As you know the operation with

clamps is common in France, and in this country I think it has made its way, so that it is generally used. In Germany, the ligature is used almost altogether. After seeing Olhausen operate year before last with catgut, that seemed so pretty as compared with the clamp operation that I was incited to try it. It has certain advantages and certain disadvantages. In the first place, I am persuaded catgut will do whatever it is necessary for a ligature to do. It has the advantage that the clamps are not there to irritate the patient, that there is less danger of injuring the viscera by pressure, and there is not the trouble in removing the clamps the second day; it also avoids the disadvantage that when the clamps stay in the vagina two days the plating comes off, so that it is expensive and troublesome keeping them clean and having them replated. It is easier and quicker to do the operation with clamps than with ligatures, especially for beginners, and it has seemed to me that the clamps could be put on farther from the uterus than the ligature. Those two points are all that there is to offset the advantages in finish and technique and easy convalescence in the operation with ligature.

DR. F. L. BURT: As Dr. Cushing has shown this specimen, I think it might be interesting to relate a case I have seen within a few days, of hysterectomy which was performed four years ago. A year ago I saw a lady with Dr. Hardy, who was taking care of her. At that time she was very fleshy, and apparently in perfect health. She gave a history of having had uterine cancer three years before, and that Professor Byford, of Chicago, had removed it. At this time she gave a history of pain just above the left groin. I made an examination to try to find out whether there was any cancer of the pelvis or not. I found that the uterus was gone and there was no evidence, under ether, of any development of cancer. Nothing was done. About last spring she began to suffer so much that she had to have medical attention, and has been treated from that time on. There has not been any treatment of any kind that has been of any service except to relieve pain. She has complained of pain so severe that about a week or ten days ago she was taking very large doses of morphia. The pain was in the neighborhood of the kidneys. There was no complaint of pain or tenderness at any other point. She wasted away so that a few days ago, the time she died, last Sunday, there was not much of anything of the body except a bloated condition. The limbs were quite a good deal swollen. At the autopsy, there was found a liver about one-third larger than normal, and at least two thirds was fatty, degenerated in masses, some of them as large as the fist, and from that down to little ones. She had not complained of the liver. The digestion and appetite had been good all the time. The left kidney was nothing but a sac, no kidney at all. The right kidney was about one-half gone. The bladder was small and about two-thirds filled with a cauliflower-looking material which looked like cancer. I know only just from the microscopic appearance. There has not been any examination made, and the only symptom that she has had that would account for any trouble about the kidneys or bladder has been frequent hemorrhages, and she had felt better after those hemorrhages. There was no tenderness over the bladder, but the bladder was two-thirds filled with this mass, and everything in the pelvis was matted together so that it was one solid mass,

and that woman has been passing urine naturally, except at times bloody, and no symptom whatever except pain in the kidneys. The peculiarity of the case was the few symptoms and the extensive disease of different organs, which presented no symptoms at all, and the fact that all this had not presented itself until after about three years following this vaginal hysterectomy by Professor Byford.

DR. CUSHING: About a month ago in the *Archives of Gynecology*, a New York publication, there was a severe article by Dr. Evans, which was given the place of the leading article, condemning the operation. Tait also disapproves the operation in toto, on the ground that anything that recurs is sure to be cancer, and anything that does not recur is not cancer. This article by Evans, would not amount to anything except that he shines in the reflected light of Tait, who seems proud of his ignorance of microscopic diagnosis. I should be glad to know if that opinion is held to any considerable extent, and if so, why? It seems to me if a woman can be taken off her bed and have from six months to two or three years of health, that is a positive gain and legitimate surgery. Tait is quoted again and again. At the time of the National Congress in Washington, Reeves Jackson made a great onslaught on the operation, and there have been grumblings ever since, but the consensus of enlightened surgical opinion is entirely in favor of the operation.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING.

A STATED meeting of the Councillors was held at the Medical Library, Boston, on Wednesday, February 3, 1892.

The meeting was called to order by the President, DR. A. H. JOHNSON, of Salem, at 11 A. M.

Sixty-nine Councillors were present.

Delegates were appointed to other State Medical Societies as follows:

Maine. — Drs. G. W. Snow, of Newburyport; C. C. Tower, of South Weymouth.

New Hampshire. — Drs. F. W. Graves, of Woburn; H. K. Foster, of Peabody.

Rhode Island. — Drs. D. M. Edgerly, of Cambridge; C. C. Odlin, of Melrose.

Connecticut. — Drs. A. H. Johnson, of Salem; J. C. Warren, of Boston; H. R. Steidman, of Roslindale.

New Jersey. — Drs. F. A. Rogers, of Brewster; J. A. Gage, of Lowell.

In accordance with the report of the Committee on Membership and Finance, three Fellows were placed on the retired list, one Fellow was dropped for non-payment of dues, one was restored to his membership in the Society, and thirty-three Fellows were reported to have surrendered their membership, under By-law VI, by removal from the State.

The committee further reported that, in accordance with a vote at the previous meeting, they had received the funds and papers of the Society from the retiring Treasurer (Dr. Draper), had audited the same, and found them entirely correct, and had transferred them to the Treasurer-elect (Dr. Forster), receiving from the latter the usual bond and sureties.

In accordance with the recommendation of the committee, Dr. George Phokas, of Athens, Secretary of

the Royal Medical Society of Greece, was elected to honorary membership.

Several petitions for restoration to membership were, in accordance with custom, referred to Committees from the respective District Societies in which the petitioners reside.

A petition was presented from the Massachusetts Society for the Prevention of Cruelty to Animals, requesting the action of the Massachusetts Medical Society as to whether in its judgment *any law, and if so, what law*, should be enacted by our legislature to restrict or limit the practice of vivisection by physicians, medical or other students or pupils, in *medical or other colleges or schools*.

The petition was referred to Drs. H. P. Bowditch, of Boston; F. A. Howe, of Newburyport; and J. F. A. Adams, of Pittsfield, as a committee to report at a future meeting.

DR. FITZ called attention to the fact that efforts are being made to erect a monument in Washington, D. C., to Dr. Benjamin Rush, and spoke in favor of the movement.

It was voted that a committee of three be appointed by the President to call the attention of the medical profession and its friends in Massachusetts to the efforts now being made to erect a monument in Washington to Dr. Benjamin Rush. This committee is empowered to receive and forward all subscriptions for the above purpose.

The following were appointed to constitute the committee: Drs. J. C. Warren and John Homans, of Boston; T. H. Gage, of Worcester.

DR. FORSTER, by request, presented the following, which was voted: That a committee of five be appointed to report at a future meeting what changes, if any, may be necessary or expedient to secure a uniform examination of candidates for Fellowship.

The committee was appointed as follows: Drs. T. M. Durrell, of Middlesex South District; G. C. McClean, of Hampden; J. H. McCollom and H. L. Burrell, of Suffolk; C. F. Withington, of Norfolk.

The PRESIDENT presented obituary notices of Drs. Henry I. Bowditch and Claudius M. Jones.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING, December 12, 1891.

DR. R. A. KINGMAN reported, by invitation,

A CASE OF LAPAROTOMY FOR OVARIAN DISEASE.¹

DR. J. W. ELIOT had found in a number of cases a region of dulness in the abdomen in front with tympany below all around. This is due simply to adhesions binding the intestines down.

DR. F. B. HARRINGTON said that ascites with a pelvic mass always makes one suspicious of papilloma.

DR. J. G. BLAKE was present at the operation, and was struck with the completeness with which the disease was removed, although at first sight this seemed impossible. In one case of his own, as the pelvis was found so full of the mass, it was deemed best to do nothing. Life was prolonged by aspiration, from time to time. The prognosis is unfavorable, no matter what you may do.

¹ See page 140 of the Journal.

DR. C. M. GREEN reported a case of

PAPILLOMA OF THE OVARY AND FALLOPIAN TUBES.²

DR. GEO. HAVEN said this case illustrated how difficult it was to diagnose the nature of any intrapelvic growth, without opening the abdomen. Dr. Green felt quite sure that we had to do with an ovary and tube, and the idea of a papilloma did not occur to me. What the nature of the mass was which appeared on the twelfth day must remain a mystery, and as far as the patient is concerned, is proved to be of no moment.

Dr. Mallory said that when the cellular elements of the growth were not very marked the danger of return was much less, and this was true of the specimen from this patient.

DR. ELIOT said that where the papilloma is removed in an unruptured cyst there may be no recurrence, whereas if the peritoneum is involved there is scarcely any hope. Scraping the peritoneum is of no use. Of course, if but a small portion were involved this should be cut out, with the hope of arresting the disease.

DR. HARRINGTON would remove a large tumor with a pedicle, simply for the purpose of getting rid of the mass, but would not subject the patient to a long operation.

Dr. Harrington showed a specimen of

GLANDULAR CYSTOMA,

and related the case. Two months ago the patient had acute pleurisy of the right side with large effusion. This subsided in a few days under the use of cathartics. Then ascites rapidly developed, and tumors feeling like fibroids were found.

Three weeks ago she was tapped and twenty pounds of fluid drawn off, which was examined by Dr. Whitney, who said it suggested papilloma. Yesterday he performed laparotomy, as the ascites had come on again in a few days. A tumor of the left ovary was removed. There was no evidence of disease of the peritoneum, although that was much inflamed. The tumor, which was soft and friable, resembling brain substance, nearly filled a basin. The fluid in the chest was apparently only coincidence.

DR. EDWARD REYNOLDS reported

CASES OF LABOR COMPLICATED BY PROLAPSED OVARIAN TUMORS.³

Owing to the lateness of the hour the discussion was postponed till the next meeting.

Recent Literature.

Addresses, Papers and Discussions in the Section of State Medicine at the Forty-second Meeting of the American Medical Association. Chicago. 1891.

These eleven papers constitute a valuable addition to the literature of State Medicine. Dr. N. S. Davis, the chairman, contributes a paper on the "Relation of Meteorological Conditions to the Origin and Prevalence of Acute Diseases." Dr. Geo. W. Jenkins furnishes a paper on "Hygiene in the Rural Districts." Dr. A. N. Bell on the "Beneficence of Disease, the General Purport of which is not Medical but Theological." Dr. H. O. Marey contributes a concise, pointed paper

on "The Coroner System in the United States," in which special comment is made upon the operation of the Medical Examiner System of Massachusetts. Dr. Jos. R. Smith, U. S. A., gives many valuable "Statistics of the Sickness and Mortality in the United States Army."

DR. L. F. FLICK takes very strong ground in his paper on "The Duty of the Government in the Prevention of Tuberculosis," in favor of preventing the disease by the action of sanitary authorities. The writer very plainly believes that it is not only within the power, but that it is the duty of such authorities to take all possible means for its prevention.

DR. STERNBERG's paper on "The Disinfection of Excreta" brings the subject down to date, and is mainly a commentary on the Report of the American Public Health Association of 1884. The substances recommended are chloride of lime, carbolic acid, creolin and quick lime. With reference to the latter he says, "We are disposed to give recently burned quick lime the first place for the disinfection of excreta in privy vaults, or on the surface of the ground." Under favorable circumstances "boiling water in the proportion of three or four parts to one part of the material to be disinfected, may be safely recommended." He emphasizes the fact very strongly that "there can be no disinfection in the absence of infectious material." DR. P. H. BRYCE contributes a paper entitled "The Sanitary and Unsanitary Relations of Underground Waters." DR. CHANCELLOR's paper on "Simple Methods of Sewage Disposal" is devoted mainly to the disposal of household sewages, and special prominence is given to a device of the author's invention in which the solids are separated by means of an iron precipitating tank.

DR. R. H. REED contributes some excellent original "Investigation on the Heating and Ventilation of School Buildings," somewhat after the method employed by Professor RIETSCHEL, of Berlin, in 1885. The observations were made in four cities of Ohio, and in thirty-nine schools, and had reference to the number of pupils present, the cubic air-space, the temperature, humidity, barometric pressure, fresh air supply, amount of carbon dioxide at different heights in the rooms and other important points. Emphasis is given to the well-established fact that the carbon dioxide in occupied apartments is uniformly diffused through the air at different heights and is not massed at the bottom of the room.

DR. D. F. LINCOLN gives a few brief principles to be observed in the construction of school buildings.

The Chinese, their Present and Future: Medical, Political and Social. By ROBERT COLTMAN, JR., M.D., Surgeon in charge of the Presbyterian Hospital and Dispensary at Jeng Chow Fu, etc. Illustrated. Philadelphia and London: F. A. Davis. 1891.

The author of this book spent several years in northern China as a medical missionary physician on the staff of the American Presbyterian Board of Foreign Missions. He had excellent opportunities for observation of the people among whom he practised his profession. His statements apply to the inhabitants of northern China; the manners, customs, characteristics and even the language of southern China differ in many respects from those of the north. DR. Colman has written a very readable book, illustrated with reproductions of photographs taken by himself.

² See page 112 of the Journal.

³ See page 133 of the Journal.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, FEBRUARY 11, 1892.

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ANNUAL REPORTS OF THE PRESIDENT AND TREASURER OF HARVARD COLLEGE, 1890-91.

FROM the report of the Dean of the Harvard Medical School, we learn that the whole number of students in attendance in that department of the University during the year was 353, as compared with 304 in the preceding year. Of these fifty per cent. had literary or scientific degrees. There were 65 applicants for the degree of Doctor of Medicine in the three-years' course, of whom 16 were rejected. There were applicants for the same degree in the four-years' course, of whom none were rejected; 10 of these students received the degree *cum laude*, and 11 received the degree of Master of Arts together with that of Doctor of Medicine. The fourth class was composed of 26 students, as compared with 23 last year.

The difficulties, which for the last thirteen years have attended the plan of offering a required three-years' and an optional four-years' course of instruction, have been removed by the vote of the Faculty passed last May to establish a single four-years' course to go into effect in September, 1892.

The Faculty has not lost sight of the possible diminution of the number of students consequent upon this increase in the requirements for the degree, but it feels perfect confidence that the community which has enabled it to carry out its previous educational reforms, will respond favorably to any appeal it may have to make again for the realization of unselfish purposes which must in turn be of direct benefit to the community itself. The Faculty has no apprehension that loss of direct income will be allowed to interfere with the school's work.

The opening of the Sears' Laboratory building has not only directly benefited the departments of pathology and bacteriology, but indirectly those of anatomy, histology and embryology, by placing improved accommodations at the disposal of the teachers of these subjects.

The connection between the Medical School and the other departments of the university has been made

closer during the past year by the adoption of a recommendation that certain laboratory courses, distinct from the regular instruction given to medical students, be recognized as suitable courses for students in the Graduate School. By a recent vote these courses have also been thrown open to candidates for the degree of Bachelor of Arts, thus enabling undergraduates intending to enter the medical profession to accomplish the very desirable object of shortening their period of academic training.

The Dean refers with much satisfaction to an important addition to the school's means of encouraging original research in medicine made by the establishment, through the generosity of Wm. S. Bullard, Esq., of three fellowships of \$5,000 each, to be designated as the George Cheyne Shattuck, the John Ware, and the Charles Eliot Ware Memorial Fellowships. The income of these fellowships may be paid to any "student or member of the medical profession who shall be selected by the Faculty of the Medical School to make such original investigations in medical science as in their opinion will be most useful to the profession and the community."

A vivifying influence upon the prosperity of the Medical School is anticipated from the recent formation of the Harvard Medical School Association, which already has upon its rolls the names of 835 members. From these alumni gratifying proofs are being constantly received of attachment to, and enthusiasm for, the university and the school.

Much special work, in addition to its regular instruction, has been done in the past year in the departments of anatomy, histology and embryology, physiology, chemistry, pathology and bacteriology.

The amount of instruction in the clinical department, which, after all, must be regarded as the most important department of a medical school, has been constantly increased.

The Dean of the Dental School reports the number of students matriculating as 44. The instruction in anatomy, physiology and chemistry is given at the Medical School, in addition to which some of the teachers at the Medical School have given lectures. Some new courses of instruction in dentistry have been added. The Faculty of the school and the alumni association are much impressed with the urgent necessity of better accommodations for the school. Its endowment has been increased by a gift of \$7,000 from an anonymous benefactor who had already given \$6,000. The school is now out of debt and has an endowment of \$15,205, beside a favorable balance of \$3,817; but the present situation is obscure and inconvenient, and the building is not well adapted to its purposes. The high standard of the school necessarily limits the numbers of the students, so that it is practically carried on by the public spirit of its instructors. They have done much, and hope to do still more towards putting the school on a firmer foundation in a suitable building of its own.

The Veterinary School has an increase of fifty per

cent. in the number of applicants for admission. A new and important instructorship in bovine pathology has been established which will be filled by Dr. F. H. Osgood, of Springfield, who will also assume other and still more important relations to the hospital. Mr. W. O. Underwood will give a course of practical talks upon the law of sales and warranty, which will embrace a general discussion of rules of evidence, with suggestions on expert testimony and the conduct of witnesses in court. The school is not self-supporting, but has been carried along by the hospital. It is very essential that either the school should be endowed, or that the hospital should be provided with larger quarters, and thus given a greater earning capacity. The two ought not to be separated.

THE QUARANTINING OF INFLUENZA.

THE attempt to deal with influenza as a disease dangerous to the public health is made the subject of comment in the *Local Government Chronicle* of January 16, 1892, as follows:

Dr. Parsons, who reported on the disease to the Local Government Board in July last, came to the conclusion that it was an infectious disorder, communicable in the ordinary personal relations of individuals one with another; and Dr. Buchanan recorded his opinion that henceforth there could be no doubt about this fact. Probably the Walmar and Ashford Local Boards rely on these opinions as justifying the notices which they have issued of their intention to proceed against persons for penalties who expose themselves in public while suffering from the disease. It is not, however, very likely that any very substantial results will follow prosecutions of this character. In commenting on the report of Dr. Parsons, Dr. Buchanan was careful to point out that early isolation precaution, which is so efficacious in preventing the spread of some infectious diseases, cannot well be applied to persons suspected of influenza among the bread-winners of a community; and he also drew attention to the brief incubation period of the disease, which enables it to give rise to some thousand attacks in the time that small-pox or typhus take to produce ten. He further stated that a better understanding of the natural history of the disease was a necessary preliminary to the discovery of better means for its prevention. In other words, the public are at present unable to protect themselves in any way against the malady; and, if this is the case, it is hardly worth while proceeding for penalties against the unfortunates, who, while suffering from the disease, venture to show themselves abroad. If the epidemic lasts a year or two longer, the chances of learning more about it will be multiplied. But considering the time during which diphtheria has been prevalent in this country, and the little that is yet known positively about it, it is impossible to feel sanguine that a solution of the whole mystery will be very soon arrived at. In the mean-

while, medical officers of health will do well to study Dr. Parsons's report, and to make the most careful records of their experience of the behavior of the disease.

The difficulties in the way of isolation are many and immediately suggest themselves; moreover, it still seems to us that transmission alone from person to person fails to explain many trustworthy observations and unquestioned features.

VACCINATION STATISTICS.

DR. JOSEF KÖRÖSI, director of the Buda-Pesth municipal statistical bureau, has lately written a pamphlet¹ in continuation of the "Kritik der Vaccinationsstatistik," which the author presented to the International Congress of Medicine, at Washington in 1887, the present paper having been presented to the tenth session of the same congress at Berlin, in 1890. It includes the statistics of 1886, presented in the earlier paper, to which are added the statistics of 1887 and 1888, as observed in nineteen hospitals in Buda-Pesth and in other provinces of Hungary.

The material of the statistics consists of observations made upon the patients admitted and treated in these hospitals for three years, the deaths which occurred in them, and the deaths which occurred throughout the provinces. These observations had reference to the condition of each person with reference to vaccination, making in all nearly 112,000 observations.

As a result of these observations the author concludes, that, if any slight increase of mortality can be charged to vaccination, with reference to certain specified diseases, there should also be placed to its credit a saving of life, at least three-hundred fold as great.

Körösi stands easily at the head of living statistical authorities upon vaccination, hence his conclusions are entitled to great respect. He attaches to vaccination a greater preventive power than to any other known means or appliance in the whole field of medicines.

MEDICAL NOTES.

DEATHS IN CHICAGO FROM TYPHOID FEVER.—The number of deaths from typhoid fever in Chicago, from January 2d to 30th, 1892, was 285. This is the highest since last May, when it was 408. July, 1891, comes next, with 200.

MORTALITY OF NEW YORK STATE IN 1891.—The summary of the State Board of Health of New York, shows that during the year there were 123,878 deaths. Of these, 20,697 were from acute respiratory disease; 13,445, from consumption. There were only four deaths from small-pox. Epidemic influenza is estimated as having caused 8,000 deaths during its prevalence in March, April and May, and 2,000 on its reappearance in December. This is double the number

¹ Neue Beiträge zur Frage des Impfschutzes, Pottkamer & Mühlbrecht, Berlin, 1891, pp. 71.

supposed to have been caused by the epidemic in 1890. It was distributed uniformly through all the districts.

THE CARTWRIGHT LECTURES of the Alumni Association of the College of Physicians and Surgeons of New York for 1892 will be delivered at the New York Academy of Medicine, February 12th, 19th and 26th, by Prof. Henry F. Osborn, of Columbia College. Subject: Present Problems in Evolution and Heredity. (1) The Contemporary Evolution of Man. (2) The Difficulties in the Heredity Theory. (3) Recent Studies upon the Germ-cells. The profession is invited to be present.

THE INSTITUTE OF HYGIENE OF THE UNIVERSITY OF PENNSYLVANIA, will be formally opened on February 22d. The following programme of ceremonies to be held in the Library of the University has been issued, to begin at 3.30 P. M.: Prayer, by the Rev. Dr. George Dana Boardman. Presentation of the new building to the Provost and Trustees, by Dr. S. Weir Mitchell, Chairman of the Committee on Hygiene. Acceptance on behalf of the Provost and Trustees, Provost William Pepper. Address, Dr. Benjamin Lee, Secretary of the State Board of Health. Address, Dr. John S. Billings, Director of the Institute. Address, Dr. H. P. Walcott, President of the Massachusetts State Board of Health. Inspection of the new Institute of Hygiene.

NOSE-CUTTING.—The Judges of the High Court of Bombay, says the *Medical Press*, have determined to make an effort to put a stop to the perpetration of the crime of nose-cutting, a form of crime very commonly practised among the native population of India, solely as a punishment for supposed or real marital offences. In the Indore Hospital, several wives were exhibited who had lately been operated upon for the restoration of their noses by the well-known flap-operation. The greater part of these women are young and pretty, and jealousy alone was the motive for this form of cruelty.

SUFFOCATION OF INFANTS IN BED.—The last annual report of the Registrar-General, in England, shows that during the year 1890, 1,500 children were killed by being suffocated by their mothers. Most of the cases were, undoubtedly, accidental; the mothers rolling onto the children during sleep. It was found that the proportion of deaths of infants from overlying is more than twice as high on Saturday night as on any other night in the week. The Registrar-General explains this fact as due to the greater amount of intoxication on Saturday than on any other day, as it is a general pay-day. Sunday and Monday nights yield the next largest proportions of such deaths.

THE PROPER WAY TO PREPARE TEA.—The *British Medical Journal* in commenting on the death of a boy who died from drinking hot tea without milk, says that the tea had been left in the oven for some time, so that it had become a strong decoction of tannin. In being drunk without milk, the tannin was not brought into a relatively harmless albuminous tannate. It is

on account of this method of making tea that it is so injurious to the digestion. Neither the Chinese nor the Japanese, who know how to make tea, use milk with it; but with them the hot water is poured on and off the leaves at table, and it is drunk as soon as it becomes a pale straw color. No people in the world drink so much tea as the Japanese, yet in Japan it is never injurious to the digestion, as by their method of preparation, the tannin is not extracted from the leaves.

NICE AS A HEALTH RESORT.—The European edition of the *New York Herald* for January 16th contains a supplement describing the climatic and sanitary condition of Nice, founded on the investigation of Dr. E. C. Wendt, in behalf of the *New York Medical Record*. The health authorities of the town have apparently become convinced of the importance of pure drinking-water and good drainage, and have already undertaken to correct the previous bad condition of both. The conditions of the drains themselves were not in as bad a condition as the connection between the drains and the hotels.

NEW ENGLAND.

THE DEATH-RATE IN BOSTON.—The death-rate has returned to normal limits. There were 185 deaths reported last week, as against 168 the corresponding week last year. The death-rate per thousand is 20.9. Fifteen deaths were reported as due to influenza, from consumption 23, pneumonia 24, bronchitis 15. The number of persons over sixty years of age was 35.

APPROPRIATION FOR THE CARNEY HOSPITAL.—The Boston Common Council has voted to request the Mayor to petition the legislature for the passage of the act granting authority to the City of Boston to appropriate a sum of \$5,000 annually, for the maintenance of the Carney Hospital.

GIFT TO THE LOWELL HOSPITAL.—Ex-Senator F. W. Howe has given \$5,000 to the Lowell General Hospital, to establish a free bed.

TO ADVANCE MEDICAL SCIENCE.—A bill has been introduced in the Massachusetts House of Representatives, calling for the appointment by the Governor of a commission of five citizens, who shall be known as the Commissioners of Medical Science. It shall be their duty to convene at the call of the Governor, and to give hearing to any matter brought before them which has to do with any principle or system of principles looking to the practical advancement of medical science. The Governor and council are authorized by the bill to expend \$5,000 for rewards to further the impetus of genius and research in the development of medical science.

THE ANNUAL REPORT OF THE MASSACHUSETTS STATE BOARD OF LUNACY AND CHARITY.—According to the annual report of this Board, during six months from April 1st to October 1st, there were 40,016 aliens landed in the port of Boston. Of these, 24,437 came from transatlantic ports and 15,579 from Canada. After the 1st of April the new emigration

law came into effect. Of the aliens from transatlantic ports, 364 were detained for further examination; of these, 83 were permitted to land; 156 were required to give bonds, and 119 were returned to the countries from which they came. In connection with public farms, the report says: "It is evident that very much more could be accomplished in the way of preventing frightful abuses connected with these places and the consequent destruction of infant's lives, if the matter of licensing and regulating all places in which infants are taken to board as a business were placed in the hands of a State Board."

NEW YORK.

REPORTERS AT EXECUTIONS BY ELECTRICITY.—Both houses of the Legislature have passed, and Governor Flower has signed, the bill allowing the presence of reporters at executions. The selecting and appointing power is vested in the warden of the prison where the execution takes place.

MEDICAL SOCIETY OF STATE OF NEW YORK.—On February 4th the Medical Society of the State of New York, in session at Albany, elected the following officers for the ensuing year: President, Dr. Louis S. Pitcher, of Brooklyn; Vice-president, Dr. H. L. Eisner, of Syracuse; Secretary, Dr. F. C. Curtis, of Albany; Treasurer, Dr. C. H. Porter, of Albany. Drs. Eugene Beach, of Gloversville, E. P. Creveling, of Auburn, B. F. Sherman, of Ogdensburg, and A. W. Suiter, of Herkimer, were recommended for State Medical Examiners.

THE HARRIS MURDER CASE, terminated last week, has excited extraordinary interest among the medical profession on account of the expert evidence brought forward and the questions of medical jurisprudence involved. The justice of the verdict rendered, though the latter was founded purely on circumstantial evidence, seems to be generally acknowledged; though it is regarded as peculiarly unfortunate that the autopsy was not made until fifty-three days after the death of the victim. There is one point in which the defendant Harris clearly overreached himself, and that was in preserving two of the capsules which he prescribed for his wife, in order to show that they contained only an ordinary dose of morphia; for had none of these capsules come into the possession of the prosecution it could not have been proved beyond question that the druggist had not made a mistake in putting up the prescription.

A UNIQUE CASE was presented by Prof. E. G. Janeway at his clinic at Bellevue, on February 1st. The patient, who is the proprietor of a small hotel on the river front, breathes at the rate of 152 times a minute, and chronic inflammation of the trachea has resulted from this rapid respiration. The shortness of breath has incapacitated him for hard work, but otherwise he appears to be in fairly good health, a careful examination of the heart, lungs and other organs revealing the presence of no disease. The

extraordinary rapidity of respiration is believed to be due to a lesion of the medulla oblongata resulting from an injury which he received more than two years ago. The man states that in the autumn of 1889, while serving on the Boston police force, he was thrown from the platform of an electric car, striking the pavement with his shoulders and the back of his head. In consequence of this fall he remained in an unconscious state for ten days, and when he recovered his consciousness he found that he was breathing, as he expressed it, "like a steam engine at high pressure." The rapid breathing has continued ever since, and he furthermore states that once or twice a month he suddenly becomes unconscious, and remains in this condition for several hours. This man presented himself at one of the hospitals in Boston more than a year ago, and has been under the observation of several physicians in Boston.

Miscellany.

THE BACILLUS OF INFLUENZA.

CANON,¹ in a further communication on the influenza bacillus found by him in the blood, says, that as the number of bacilli in a drop of blood is so small that they are hard to find, he has succeeded in cultivating them in the blood-drop itself. Separate drops of blood are put into an incubator and kept at a temperature of 37° C. In twenty-four hours the colonies have already begun to develop, and in forty-eight hours they can be easily found. From these colonies other colonies may be started upon different media. The pure cultures thus obtained have the same appearance as those already described by Kitasato.

TYPHOID FEVER IN CHICAGO.

The Health Officer of Chicago states, through the daily press, that an investigation made by him shows that only three deaths out of every fifteen reported at his office as being caused by typhoid fever is correct. This is about the worst reflection on the diagnostic ability of more than two thousand physicians that has ever come under our observation; but it parallels right along with the same official's statement that the lake water at the crib is free from contamination, as shown by chemical analyses made from time to time in his office.

Evidently the Illinois State Board of Health are quite skeptical in their belief of these official utterances, as indicated by their appointment of Dr. John H. Rauch as Sanitary Expert and Counsellor, with directions to at once examine and report upon the unsanitary conditions which are so productive of sickness, and the high rate of mortality from enteric disease in Chicago. . . .

It would be a right good thing for any one of the Chicago Medical Societies to appoint a good large committee of its best-known members to examine into and report upon the existing conditions in the Chicago Health Office. Official reports are either very valu-

¹ Deutsche med. Woch., January 21st.

able, because of their truthfulness, or misleading to the extent of actual criminality when fictitious. — *Journal of American Medical Association*, February 6, 1892.

NEW YORK AMBULANCE SURGEONS.

ADVANTAGE has been taken of this occurrence¹ in regard to which the autopsy shows the ambulance surgeon was blameless to abuse not only the ambulance surgeons of the hospital concerned in it, but the ambulance surgeons of New York as a class; they have been held up to the scorn and reprobation of the community. It is high time that a word should be spoken, and loudly spoken, in behalf of the young men in our hospitals. A more meritorious, intelligent, hard-working, conscientious set of young men cannot be found. They work hard and long to obtain their positions, which they do by giving proof of superior intelligence and acquirements, and they work hard and long while they hold them, in order the better to fit themselves for the practice of their profession. In a word, they are the flower of the younger men, and in a few years they will stand fully ahead of the best of the older ones. If they cannot do the work well, it cannot be done well. But, notwithstanding all that has been said, notwithstanding their liability to error, and notwithstanding their inability to see what is invisible, and to touch what is intangible—an inability which they share with the rest of mankind—their work is well done. The superintendent of one of our largest hospitals, when recently asked by a reporter if the present system of ambulance service was satisfactory, replied that it was, and "eminently so." And in this opinion of an impartial, and necessarily even an exacting, superior, we are confident that all who have personal knowledge of the matter will heartily concur. — *New York Medical Journal*, February 6th.

UNIQUE THEORIES OF THE MECHANISM OF LABOR.

THE *Maryland Medical Journal* criticises editorially the freedom of the medical press, when it receives without comment, articles containing recommendations of dangerous appliances, founded on grotesque theories. The case in point is an "atmospheric tractor" and a "uterine safety tube," the latter, essentially a soft rubber catheter to be introduced into the uterus during labor. The theory of the inventor is that "the power which expels the fetus is the force of super-heated air which is collected in the womb behind the child's body and expands with a rise of temperature in the womb during labor."

This sounds so much like an article which appeared in a medical monthly a few months ago, introducing an "atmospheric tractor," that we are inclined to believe that the author is the same; but in the mean time he has apparently changed his theory of labor, for in the article in question he says:

"When the uterus contracts round the body of the child, it expels all or nearly all the air from the uterine cavity, just as, when the hand firmly grasps a ball, the air is squeezed out from between it and the palm and fingers. The abdominal muscles then contract, forcing

the fundus of the uterus down and pushing the child's body and head into the pelvic cavity. While this is occurring, there is a partial vacuum in the upper part of the uterus or that portion of it which is firmly contracted around the child. When the abdominal muscles relax, the pressure of the external air, and the expansive pressure of the air in the vagina are exerted against the head and shoulders of the child, and force it back until sufficient air enters the uterus to overcome and break up the vacuum and elevate the fundus. . . . That the retrocession of the head is due to atmospheric pressure almost altogether and only in a small degree to muscular resistance or pelvic rigidity, must be obvious to those who have felt the head stop and recede before it had reached the pelvic floor and while it was still suspended in space, a half an inch or more above the muscles."

DISINFECTION OF THE HANDS.

DR. H. A. KELLY,² after giving the details of a large number of experiments made by himself and his associates, gives the following conclusions as to the best method of disinfecting the hands:

Scrubbing the hands with especial attention to the nails, — not more than one millimetre in length,—for ten minutes in water, frequently changed, at about 104° F. Immersion of the hands in a solution of permanganate of potassium, made by adding an excess of the salt to boiling distilled water, until every part of the hands and lower forearms is stained a deep mahogany red or almost black color. They are then transferred at once to a saturated solution of oxalic acid until completely decolorized and of a healthy pink color. Washing off the oxalic acid in warm sterilized water.

By this simple process the hands are rendered more nearly absolutely aseptic than by any other known means.

The author has found that it is impossible to get rid of staphylococci by scrubbing the hands and nails with ten to twenty-five minutes with a sterilized brush, soap, and water, temperature 104° F. The bichloride of mercury solutions as used, up to 1 : 500, are not germicidal, as supposed. Previous erroneous conclusions as to the efficiency of the bichloride are shown to be due to an inhibiting action which may persist at least twenty-four hours after the last use of the drug. Hydrogen peroxide and lysol (four per cent.) were tested and found wanting.

In the present state of our bacteriological knowledge as to the causes of inflammation and suppuration, we are bound to use every means in our power to avoid sowing any unnecessary germs in our wounds. Soap and water are, Dr. Kelly believes, the best disinfectants, if we use but one, for they remove all germs which will come away easily. The bichloride of mercury, although dangerous on wounds on account of its property of coagulating and causing necrosis of albuminous tissues, has the valuable property of inhibiting those germs with which it comes into contact. Permanganate of potassium and oxalic acid are harmless to the hands and are germicidal. Soap and water plus the permanganate of potassium and oxalic acid are the only true germicides, and therefore the best disinfectants we possess to-day.

¹ New York Notes, Journal, February 4th.

² American Journal of Obstetrics, December, 1891.

RESOLUTIONS OF THE GALEN MEDICAL CLUB, ON THE DEATH OF DR. C. M. JONES.

WHEREAS, we, the members of the Galen Medical Club, have learned with deep regret and sorrow that our friend and fellow-member Claudio Marcellus Jones has fallen in the battle of life, we desire to express our appreciation of his worth as a man, his skill as a physician and his unflinching devotion to his duties, in the performance of which he received the wound which, emphasized by too arduous labor in his chosen field, eventually caused his death.

Prodigal of work, frugal of words, his ripened scholarship, evidenced by his degree from Harvard, "summa cum laude," was ever at the service of his friends, as were to the poor and suffering his services as a physician regardless of the question of pecuniary reward.

Though he died just as he was about to enjoy the fruits of long years of work, those who knew him best know also that the satisfaction of duty well performed was to him the source of the greatest happiness. We shall cherish his memory as that of a valued friend and a man who was distinctly the type of what the true physician should be; and he will ever remain an exemplar whose career should be emulated by us and by all those who adopt the profession of medicine.

G. M. GARLAND, M.D., Secretary.

THERAPEUTIC NOTES.

PREVENTION OF COCAINE POISONING. — Smith¹ recommends that patients be prepared by giving them a drop of a one per cent. alcoholic solution of trinitrine a minute before administering the cocaine, repeating the dose at intervals if the pulse be not affected and no pain or fulness in the temporal region be felt. The trinitrine acts almost as rapidly and continues to affect the vaso-dilators for upwards of half an hour longer than nitrite of amyl.

PIPERAZIN. — This substance in aqueous solution dissolves twelve times as much uric acid as is dissolved by the same quantity of carbonate of lithium. There is formed a neutral urate of piperazin, which is seven times as soluble as urate of lithium. Piperazin itself and also the hydrochloride are easily soluble in water. The dose is from fifteen to forty-five grains a day. It may be prescribed as follows:²

R. Piperazin gr. xv.

Acid testi. gr. vi.

Syrup Auranst cort. M.

Sig. Take in the course of the day. To be increased gradually.

FATAL POISONING BY CHLORATE OF POTASH. — Dr. M. J. Donahoe reports in the *University Medical Magazine* for January, a case of a man thirty-six years old who took by mistake two tablespoonfuls of chlorate of potash in water. Four or five hours afterwards violent vomiting set in, accompanied by great pain and tenderness in the epigastrum, followed by albuminuria and cardiac weakness, gradually increasing for a week, when the patient died.

CLEANSING OF THE HANDS AFTER THE USE OF CARBOLIC ACID OR CORROSIVE SUBLIMATE. — Carbolic acid is removed from the hands by bathing them for a sufficient time in alcohol and then anointing them with lanolin. After the use of corrosive sublimate solution the hands should be bathed in a solution of common salt 1 to 50, then washed with soap and water, and finally rubbed with lanolin.

¹ British Medical Journal, December 8th.

² Lo. Sperimentale.

Pharmac. Central., No. 28, 1891.

SALOL AS A COATING FOR PILLS. — In consequence of the fact that salol is not dissolved in the stomach, but is only attacked by the pancreatic juice after it reaches the intestine, Dr. Ceppi suggests its use for coating pills intended not to act before they enter the intestines.

R. Salol	gr. xxx.
Tannin	gr. viii.
Ether	3 fl. oz. M.

With this solution the pills are varnished several times, until the protecting layer is sufficiently thick.

COLD IN THE HEAD. — The following powder, to be used as a snuff, is recommended in *Medecine Moderne*.

R. Talei pulv.	3 lbs.
Antipyrin	gr. xxx.
Acidi borici	3 t.
Acidi salicylici	gr. viij.

OLD TINCTURES. — Great care should be taken in administering tinctures which have stood for a long time in small vials. When the bottles happen to be loosely corked the alcohol readily evaporates, leaving the drug in the form of a concentrated tincture, the pharmacopoeial dose of which might produce very serious, if not fatal, results.

¹ Merck's Bulletin, December.

² Medical Record.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 30, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York	1,015,361	862	325	12.24	22.56	2.36	5.40	2.88
Philadelphia	1,000,000	607	249	19.88	25.28	2.72	10.56	2.88
Baltimore	1,046,964	468	146	15.43	21.49	5.64	.24	6.38
Brooklyn	806,345	468	146	—	—	—	—	—
St. Louis	451,770	225	56	7.64	24.64	2.64	.44	3.08
Boston	485,471	216	56	25.56	—	—	—	—
Baltimore	443,453	162	46	28.57	—	—	—	—
Cincinnati	296,908	154	50	11.05	13.65	.65	3.90	6.50
Cleveland	292,000	162	37	18.05	22.89	.95	.95	11.40
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburgh	240,000	—	—	—	—	—	—	—
Albany	240,000	104	48	15.14	21.12	3.84	1.92	13.44
Washington	230,392	170	63	8.26	30.49	.59	1.18	2.29
Nashville	16,168	40	12	32.50	20.00	—	—	2.50
Charleston	16,165	37	7	—	10.80	—	—	—
Portland	36,425	21	4	—	25.56	—	—	—
Worcester	14,153	39	2	10.00	26.48	—	—	3.33
Fall River	17,696	67	27	8.52	23.56	—	2.84	1.42
Cambridge	70,628	38	14	2.63	23.67	—	—	2.63
Lynn	55,727	—	—	—	—	—	—	—
Lawrence	44,424	36	3	12.50	10.71	7.14	3.57	7.34
Springfield	44,179	19	4	21.04	15.58	—	—	10.32
New Bedford	40,733	21	4	9.52	—	—	—	—
Salon	30,861	19	3	—	15.78	—	—	—
Chelsea	27,905	16	3	6.25	18.75	—	—	6.25
Haverhill	27,422	14	1	8.33	—	—	—	—
Gloucester	24,445	15	3	26.66	20.00	—	—	6.66
Melton	24,651	12	3	16.66	16.66	—	—	—
Newton	24,379	5	3	—	20.00	—	—	—
Malden	23,031	14	2	21.42	21.42	14.38	7.14	—
Pittsburg	22,523	11	4	—	27.27	—	—	—
Wellesley	18,767	3	0	—	—	—	—	—
Pittsfield	17,281	—	—	—	—	—	—	—
Quincy	16,723	10	4	—	—	10.00	—	—
Newburyport	13,947	6	2	33.33	—	—	—	33.33
Medford	11,250	1	0	—	—	—	—	—
Wellesley	10,424	—	—	—	—	—	—	—
Hyde Park	10,193	—	—	—	—	—	—	—
Pembroke	10,158	1	0	—	—	—	—	—

Deaths reported 3,169; under five years of age 1,120; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 435; acute lung diseases 715; consumption 335; influenza 104; diph-

theria and croup 157, typhoid fever 89, scarlet fever 87, diarrhoeal diseases 28, cerebro-spinal meningitis 27, whooping-cough 15, croupies 14, measles 12, malarial fever 3, puerperal fever 1. From diarrhoeal diseases New York and Chicago 9 each, Brooklyn, Washington, Nashville and Lowell 2 each, Milwaukee and Haverhill 1 each. From cerebro-spinal meningitis Chicago 8, New York 5, Washington 4, Lynn 3, Brooklyn and Worcester 2, Cleveland, Lawrence and New Bedford 1 each. From whooping-cough New York and Pittsburgh 3 each, Milwaukee, Springfield and Gloucester 2 each, Brooklyn, Boston and Cleveland 1 each. From croupies Washington 4, Chicago 3, Brooklyn and Nashville 1 each. From malarial fever New York, Brooklyn and Nashville 1 each. From puerperal fever Boston, Cleveland and Milwaukee 1 each.

METEOROLOGICAL RECORD.

For the week ending January 30, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer		Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.	
	Daily mean.	Daily range.	Daily mean.	Daily maximum.	Daily minimum.	Daily mean.	Daily range.	Daily mean.	Daily range.	Daily mean.	Daily range.	Daily mean.	Daily range.	
S.—24	29.76	22	58	17	65	56	61	N.W.	S.	11	12	C.	O.	.01
M.—25	29.45	30	46	26	77	79	74	S.W.	S.W.	10	10	O.	O.	.01
T.—26	29.35	28	48	28	78	74	70	N.W.	S.W.	10	10	O.	O.	.01
W.—27	29.35	11	48	30	81	57	58	N.W.	N.W.	27	19	C.	C.	.01
T.—28	29.93	21	30	12	70	44	59	W.	S.W.	15	12	O.	O.	.01
F.—29	29.86	31	35	29	73	73	75	W.	S.E.	4	9	O.	O.	.01
S.—30	29.98	26	36	21	72	76	73	S.E.	N.	29	20	O.	O.	.01
EP	29.78	24	32	16	68	63	66			20	16			

* Cloudy; C, clear; F, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow. + Indicates trace of rainfall. — Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 6, 1892, TO FEBRUARY 5, 1892.

The order relating to CAPTAIN AARON H. APPEL, and FIRST-LIEUT. JULIAN M. CABELL, assistant surgeons, U. S. A., is suspended until further orders.

LIEUT-COLONEL JOSEPH F. WRIGHT, surgeon, U. S. A., is relieved from duty at Fort Verde, Arizona, and will report to Fort Leavenworth, Kansas, and will repair to San Francisco, Cal., and assume the duties of acting assistant medical purveyor, taking charge of the medical supply depot at that place, and relieving LIEUT-COLONEL GEORGE M. STEENBERG, surgeon, U. S. A., who, upon being relieved, will proceed to Governor's Island, N. Y., and report in person to the Commanding General Department of the East, for duty as attending surgeon and examiner of recruits in New York City.

FIRST-LIEUT. HENRY D. SNYDER, assistant surgeon, now temporarily serving at Fort Reno, Oklahoma Territory, is assigned to duty at Fort Supply, Indian Territory, where he is now temporarily serving.

FIRST-LIEUT. SAMUEL R. DUNLOP, assistant surgeon, is relieved from duty at Fort Sill, Oklahoma Territory, and assigned to duty at Fort Supply, Indian Territory, where he is now temporarily serving.

MAJOR JOHN BROOKS, surgeon, U. S. A., is granted leave of absence for twenty-eight days.

CAPTAIN AARON H. APPEL, assistant surgeon, U. S. A., granted leave of absence for twenty-three days.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 6, 1892.

J. L. NEILSON, surgeon, detached from Training-ship "Portsmouth" and granted two months' leave of absence.

SOCIETY NOTICE.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.—The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, February 17th, at 7.45 o'clock.

Papers: Dr. Gertrude Van Pelt, "Cases of Dyspepsia, with Treatment based upon an Examination of the Gastric Juice."

Dr. A. K. Stone, "Glycosuria caused by a Probable Tumor in the Fourth Ventricle." Dr. P. C. Knapp, "The Provision for Patients with Chronic Diseases in the City of Boston."

ALBERT N. BLODGETT, M.D., Sec'y, 390 Boylston St.
E. G. CUTLER, M.D., Chairman.

RECENT DEATHS.

ROBERT WILLARD, M.D., M.M.S.S., died in Boston, February 6th, aged fifty-three. Dr. Willard was born in Boston, and graduated from Harvard College in the class of 1860. At the outbreak of the war he was a medical student. He entered the navy as assistant surgeon, and served on the monitor Catskill and the flagship Colorado. He received the degree of M.D. from the Harvard Medical School in 1864. Since 1871 he has been ophthalmic surgeon at the Massachusetts Charitable Eye and Ear Infirmary. He was a member of the American Ophthalmological Society, and of the Boston Society for Medical Improvement.

HENRY W. STILLMAN, M.D., of Woonsocket, R. I., died February 5th, aged sixty-seven. He had practised for eleven years in Lime Rock, twenty-seven years in Cumberland and six years in Woonsocket.

SIR MORELL MACKENZIE died in London, February 2d, aged fifty-four. Dr. Mackenzie received his medical education at the London Hospital Medical College, and in Paris and Vienna. In 1852 he founded the Hospital for Diseases of the Throat in Golden Square, London. In the same year he received the Jacksonian Prize from the Royal College of Surgeons for his essay on diseases of the larynx. He soon afterward became assistant physician to the London Hospital, becoming, in due course, full physician, and was appointed lecturer on diseases of the throat, an appointment which he held to the time of his death. He was a corresponding member of the Imperial Royal Society of Physicians of Vienna and of the Medical Society of Prague and an honorary fellow of the American Laryngological Association. In 1887 he was called to attend the crown prince, later the Emperor Frederick III of Germany, who was suffering from disease of the larynx. In controversy which was raised over his diagnosis, treatment and conduct in this case will be remembered. He was knighted by the queen at the request of the emperor. Dr. Mackenzie was a prolific writer and was the author of a large number of publications on laryngological subjects. His chief work was issued in two volumes, under the title of "Diseases of the Throat and Nose."

BOOKS AND PAMPHLETS RECEIVED.

Annual Report of the Postmaster-General of the United States for the Fiscal Year ending June 30, 1891.

Tubal and Peritoneal Tuberculosis, with Special Reference to Diagnosis. By George M. Edelblith, A.M., M.D., New York. Reprint. 1891.

Inequality of the Pupils in Epileptics, with a Note on Latent Anisocoria. By William Browning, M.D., Brooklyn, N. Y. 1892.

Delsartean Physical Culture with the Principles of the Universal Formula. By Carrica le Favre. New York: Fowler & Wells Co. 1891.

Essentials of Medical Physics. Saunderson Question Compendia, No. 22. By Fred J. Brockway, M.D. Philadelphia: W. B. Saunders. 1892.

I. Femoral and Ventral Hernia in Woman. II. The Kangaroo Suture. By Henry O. Marcy, A.M., M.D., LL.D., of Boston. Reprint. 1891.

The Practical Adjustment of Spectacles. By George M. Gould, M.D., Ophthalmologist to the Philadelphia Hospital, Philadelphia. Reprint. 1892.

The Fire Protector of Hospitals for the Insane. By L. H. Prince, M.D., Resident Physician "Bellevue Place," Batavia, Ill.; Chicago: C. H. Blakely & Co. 1891.

The After-Treatment of Cataract Operations in Light Rooms (and by an adhesive strip on one eye only, the eye not operated upon being left open). By Mr. Chisolm, Baltimore. Reprint. 1891.

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M.D. First Assistant Laboratory of Hygiene, University of Pennsylvania. Philadelphia: Lea Brothers & Co. 1892.

The Treatment of Typhoid Fever and Reports of Fifty-five Cases, with only one Death. By James Barr, M.D., of Liverpool, with an Introduction by W. T. Gardner, M.D., LL.D., of Glasgow. London: H. K. Lewis. 1892.

The Chinese: Their Present and Future; Medical, Political and Social. By Robert Colman, Jr., M.D., Surgeon in Charge of the Presbyterian Hospital and Dispensary at Teng Chow Fu, etc. Philadelphia: F. A. Davis Co. 1891.

Original Articles.**INTESTINAL ANTISEPSIS.**

BY HAROLD C. ERNST, M.D.,
Assistant Professor of Bacteriology, Harvard University.

This subject is one of the greatest importance to practical medicine. It is true, and it has sometimes been made a subject of reproach to physicians, that the surgical branch of the profession has apparently appreciated more and taken greater advantage of the advances in experimental work of the last few years. The reasons for this are easily to be seen upon even a slight consideration of the subject, and are perhaps no quite so flattering to surgery as has been too easily conceded. Surgical problems of aseptic and antiseptic treatment are, to a very large extent, mechanical in their nature. It is settled that the complications arising in surgical practice in the way of infection and suppuration are due to the activity of the bacteria and their products, and it necessarily follows that the prevention of the appearance of these consequences is a matter of exclusion of the causative agency, — provided the processes themselves do not exist at the time of surgical interference.

So too, with these same processes after they have been once established, — a free exit to the hurtful agencies, — free drainage, in other words, is what is necessary for their cure, and beyond this, even the surgeons have not travelled far in the line of direct cure for such processes.

The matter becomes a very different one as soon as one approaches a medical problem, typhoid fever for instance. In such a case, there is no possibility of adopting the procedure of free drainage or anything else that will secure a sure and speedy exit to the toxic agencies. Prevention, in the case of infectious diseases, stands to-day upon very much the same level as prevention in the case of infectious wound-diseases, except that in the latter, one's attention is confined to the individual case and single patient that is usually under full control, while in the former, the necessary precautions must often be taken before the patient has even come under observation, in fact before he has become a patient at all.

So that even from this point of view the medical problems are more complex than the surgical. This being so, what shall be said of the infinite complexity of those questions of cure, the possibility of which has but just begun to be forced upon our attention by our increasing knowledge of the activity of the micro-organisms in the production of the many forms of disease in which they are now known to be concerned?

In such cases it is not a question of a free exit to agents destructive to vital activity, this to be done once and for good, but of something entirely beyond this, some procedure much more prolonged and much less destructive in itself than an incision of greater or less extent. Before such problems as these can be solved, all the knowledge that has as yet been gained and an enormously greater amount than this, yet to be secured, must be thoroughly appreciated and turned to its proper uses.

In the general study of the action of the micro-organisms in the living body, there are certain facts that have been disclosed that are of general utility in

the consideration of an infectious process, these relating especially to the method of production of their harmful effects. We know that these effects are the result of (1) mechanical obstruction, due to the presence of masses of the organism in the part, and the mechanical destruction of the vital processes in that part; (2) to the appropriation by the invading cells, of the nutritious material necessary for the vitality of the tissue-cells, and the resulting death and necrosis of these latter; (3) to the formation, after various processes of retrograde metamorphosis, of many new chemical compounds in the body, with greater or less toxic effects upon the surrounding vital tissues.

Of these various methods of producing ill-effects, the first is the least common, and the last the most so, and the problem before us is to so study each and every disease that we may know how it is produced, and what are the best means to neutralize or destroy this method of production. This seems like a simple statement, but as the investigations have advanced, the simplicity appears as merely one of words and not of fact. Before a single one of the infectious diseases can be understood from the modern point of view, we must have further knowledge upon phagocytosis, chemio-taxis, positive and negative, the effect of the various tissues of the body, as blood-serum, upon the micro-organisms in health, and the chemistry of the ptomaines, leucomaines, and tox-albumins must be an actuality. As advances in any of these directions occur, it is possible to hope for at least a partial solution of some of the problems of how to treat disease specifically; but any such solution must be based upon more knowledge than we have now.

Huepp¹ states some of these problems in an article upon the investigation of disease, and the points derived therefrom, of value in treating and healing infectious disease. He lays especial stress upon the fact that it is not only the bacteria that produce infectious disease, but also those qualities that are empirically called "predisposition" and "immunity," as well as social and hygienic surroundings. Speaking of the requirements in a medicament to be used in an infectious disease, he sets them down as (1) that it must have a chemical action upon cell protoplasm; (2) that it must have a specific affinity for the tissues against which it is directed, and (3) that this affinity must of course be the same as that manifested by the infections principle and its products. The greater portion of his article lays especial stress upon tuberculosis, and from the work done in this direction as well as others, he draws the conclusion that after all, the best method of treatment we yet have, is to build up the body and improve the hygienic conditions. He looks forward to the possibility of obtaining some special agent to use in particular cases, but holds out the old warning that we must not expect to diminish the sum total of mortality, although we may be able to affect one disease, as has already been the case with small-pox, since the introduction of vaccination. An extremely important point that he makes is, that it should not be expected that we can ever secure a material to act quickly against all diseases, for the reasons that will easily occur to any one. If anything is secured in certain of them, it will be something that will act so slowly as to make the effect of any one dose practically imperceptible, and whose manner of cure will be almost a reversal of the process by which the disease

¹ Read before the Boston Society for Medical Observation, December 7, 1891.

² Berl. Klin. Woch., No. 11, 1891.

made itself manifest. So much for the general considerations.

This is not the place to speak of the mass of work that has already been done toward solving the problems spoken of, as being before us, but one or two exceptions may be made, notably in the case of Mya and Sanarelli,³ who, in a very recently published article, give the results of a large amount of work upon the influence of a high degree of "hematolysis" as a favoring cause of the infectious diseases. Using a blood-destroying agent, acetylphenyl hydrate, and various injections into rats, guinea-pigs, pigeons and dogs, and employing anthrax bacilli and pneumococci as their test-agents, they come to the conclusions that (1) destruction of the blood-corpuscles as well as other well-known causes (bleeding, weakness, fasting, etc.,) favors the beginning and course of an infectious disease in animals that are possessed of only a relative immunity against this disease under natural conditions. (2) That the same destruction of the blood-corpuscles does not, however, favor infection in animals that have a high degree of immunity.

In the line of the same general subject, but in a different direction are the researches of Ferranini,⁴ in which he attempts to determine the antiseptic dose of substances that are often used for their antiseptic action. This antiseptic dose, he calls that amount of the material under investigation that, in one litre of fluid, will prevent the transformation of blood-fibrin into peptone under the action of chlorhydrate of pepsin. It is interesting to know that he found non-antiseptic, even in a proportion as high as five parts in one hundred, such substances as iodoform, boric acid, sulphate of quinine, turpentine, iodol and naphthol-B. He lays especial stress upon the advisability of those attempting to secure stomachic and intestinal antiseptics being also familiar with the antiseptic action of the substances used.

Ometschenko⁵ gives the results of many experiments as to the effects of certain of the ethereal oils upon the bacteria of typhoid, tuberculosis and anthrax. His conclusions are of importance as being steps in a direction giving much promise for further investigation, both experimentally and clinically. Some of them are: (1) The vapor of the ethereal oils has a definite disinfective action. Curiously enough he puts oil of cinnamon, oil of fennel, and oil of lavender at the head of the list; (4) The protoplasm of the bacteria undergoes a specific change, as is seen by their behavior towards aniline colors and the granulation of the protoplasm; (8) emulsions of ethereal oils diminish their volatility; (9) air only takes up a certain quantity of the vapor, and violent forcing does not increase this quantity. The air must be renewed as often as a knowledge of the amount it takes up and its effect upon the specific micro-organism makes necessary.

Such experiments as these are of the greatest importance, in the special subject under consideration this evening, even in view of the work of Korkunoff⁶ negating the supposition that infection can take place through the normal intestinal wall.

The general influence of surroundings upon the attacks of infectious disease is well illustrated by Canalis

and Morpurgo⁷ in their work showing the effect of such influences, notably in one instance. Experimenting with pigeons, that are immune to anthrax under normal conditions, inoculations of the bacilli were made and at the end of eight days fasting was enforced. As soon as this was done, the birds died of anthrax, showing not only that the bacilli lived in their bodies during that time, but that the influence of hunger had a very remarkable effect in diminishing the immunity of these birds against the attack of the micro-organisms.

Coming now to work bearing more directly upon the subject, some of the most important that has been published may be very briefly summarized.

Cantani⁸ in an interesting article upon intestinal antisepsis, makes the fundamental statement that the various bacteria in the intestinal tract of the living body cannot be killed by any chemical agent with which we are yet familiar except in the rarest cases, and that for the present, attention must be directed towards retarding the development or decreasing the numbers of those present. The two roads by which materials with these objects in view can be introduced are the mouth and the rectum. If the first be chosen, the results are extremely uncertain, for the reason that the material employed must either be unaffected by the gastric juice, or else it must be soluble, and therefore lose a large part of its local effect by reason of absorption. Administration by the rectum, is therefore the shortest and most certain method, for a certain distance. By this means we have control of the bowel as far as the fluid or other material can be passed, and may govern the condition of things as we choose, at least, for limited periods of time. For this purpose, the author recommends tannin and carbolic acid especially. The development of cholera spirilla was retarded by the use of a tannin solution of .5 per cent. strength, and they were mostly killed after six hours; they were completely destroyed after one and one-half hours contact with a 1.5 per cent. solution.

P.-Lasky⁹ points out that the fermentative changes in the intestine represent more than the mere presence of bacteria and means to get rid of them. He showed by experiment that the bacterium aceticum, normally present in the intestine, destroys certain of the bacteria of green diarrhea. Therefore it is quite possible in certain cases, that a powerful anti-bacterial treatment, even if successful in destroying germs, may be undesirable, in that it interferes with the conflict between different forms of micro-organisms. Woodbridge¹⁰ reviews the work upon intestinal antisepsis, and speaks of that tending to show the value of creolin and naphthol-B.

We are familiar with the mass of assertion in regard to the experimental and clinical value of various of the coal-tar colors, and if certain of the observations reported are true, it will hardly be possible to agree with the editorial remark of the *Boston Medical and Surgical Journal* (vol. cxii, p. 18), that "attempts to control the course of typhoid fever by antisepsis of the bowel will be ultimately abandoned as irrational and unavailing." If the day should dawn upon which we could feel that there had been secured the material effective in the arrest or destruction of the typhoid bacillus in the body without injury to the patient, then

³ Fort. d. Med., bd. ix, 1891, s. 907.

⁴ Cent. f. Biol., bd. ix, 1891, p. 1284.

⁵ Cent. f. Biol., bd. ix, 1891, s. 813.

⁶ Wratzsch, Nos. 48, 50 and 52, 1890, with a long review in Cent. f. Bact., bd. vi, s. 445.

⁷ Fort. d. Med., bd. viii, 1890, Nos. 18 and 19.

⁸ Giorn. intern. delle scienze med., 1890, Fasc. 19, p. 741.

⁹ Deut. Med. Woch., May 17, 1891.

¹⁰ Practitioner, vol. 44, p. 426.

these methods may be considered out of date, but until then something of the sort spoken of seems to be the only directly effective means at our command.

FAT EMBOLISM.¹

BY W. F. WHITNEY, M.D.

THE following case of comminuted fracture of the femur, with death on the fourth day, for which no evident cause was found, aside from a fat embolism of the lungs, leads to a consideration of how far we are justified in regarding this as an adequate cause of a fatal termination.

A male, sixty-two years old, entered the Massachusetts General Hospital in the service of Dr. Maurice H. Richardson, with a fracture of the right femur, from an elevator falling upon him two hours before.

During the first two days he was reported as comfortable, but having had no movement of the bowels was given a saline cathartic on the second day, without any effect.

Up to noon of the third day he had no defecation, and at that time his bowels began to swell, and increased till four P.M., with diminution of the area of liver dulness. An enema caused a dejection of the contents of the rectum. At one P.M., vomiting commenced and continued intermittently till eight P.M. Vomitus was very dark brown, but without fecal odor. No gas passed either way. Urine normal and passed without difficulty. On the fourth day there were the same general symptoms. Vomitus of a black color. Abdomen aspirated and a clear straw-colored serum obtained.

Conscious, but restless. Suffered no pain, his only complaint was of difficulty in breathing. Pulse went up during the day while the temperature fell. Died suddenly at quarter-past five P.M.

	Aug. 31.	Sept. 1.	Sept. 2.	Sept. 3.	Sept. 4.
Temperature	99°	101.5°	100°	101°	98°
Pulse	60	70	70	90	130

Autopsy by Dr. W. F. Whitney, eighteen hours after death. Body of a large man. Rigor mortis present, and some lividity of the dependent portions of the body. The right foot was everted, the leg shortened, and there were numerous ecchymoses over the ankle and middle of the thigh. Upon opening the latter a comminuted fracture of the femur in its middle third with considerable laceration of the muscles was found.

Head not opened.

Thorax, pericardium and heart were normal.

Both pleural cavities contained a little clear fluid with some old adhesions of the surface of the right lung.

The lungs were partly retracted, the upper lobes dry, the lower lobes of a dark bluish color, and considerable dark thin fluid escaped from the cut surface. There was no evidence of consolidation anywhere. Microscopic examinations showed the small vessels extensively plugged with a highly refracting fluid substance (fat).

Abdomen. The peritoneal cavity contained a small amount of fluid. The peritoneum was injected, but had everywhere its normal lustre, nor was there any-

where evidence of a deposit or exudation of any sort upon the surface. The stomach was filled with a dark, foul-smelling fluid, and this could be traced to the end of the jejunum. Beyond this point the intestines contained a little yellowish feces. The inner surface of the stomach was marked here and there by a network of injected capillaries and a few superficial losses of substance with a hemorrhagic infiltrated edge.

The intestines from the stomach to the rectum were extremely distended with gas.

The spleen was of normal size and pale. The kidneys and liver were pale, slightly opaque, and upon microscopic examination the cells were found to be markedly granular.

Before considering this case further it will be well to recall, briefly, what has been brought out from the study of the subject.

Magendie, in 1827, was the first to prove experimentally that oil injected into the veins of an animal would produce death. But it was not till 1862 that Zenker called attention to the presence of fat in the vessels of the lungs in some cases of death after fracture of the leg; and it then came to be regarded as a sufficient cause. But gradually, as the infectious process with which it was often associated were better understood, the conviction grew that fat embolism of the lungs alone was not sufficient to produce death, and that its action on centres more remote must be considered. By far the most thorough and exhaustive study was made by Scriba,² and published in 1879. And since then but little has been added to our knowledge. His work consisted in experiments on animals and the analysis of cases by the light of the results thus obtained.

The problems which he proposed were:

(1) How much fat is required to kill? (2) In what way does it act? (3) How is it eliminated?

In answer to the first he found that in order to kill an animal by fat embolism a quantity is necessary varying with the force with which it is injected, and with the distance of the point of injection from the heart. But in no case was it less than three times the amount of fat contained in the entire femur of the animal.

His conclusion as to the mode of action is: that death after aseptic fat emboli occurs only from large numbers in the brain and spinal cord, and in consequence of the arterial anemia and the resulting disturbance of nutrition.

Of course, any deleterious action on the heart and lungs had first to be eliminated. In regard to the former it was done by direct observation on the living animal, and a comparison of the length of time that the heart of an animal killed by fat injection reacted to stimulus when compared with the normal. From these experiments he found that the disturbances which are caused by the entrance of oil into the heart are only to be found in the increase of the quantity of fluid of which the heart has to take care. And the speedy death is caused neither wholly nor in part by paralytic of the heart, and that aseptic fat has no permanent influence on its action.

As for the lungs, experiments have shown that five-sixths of the arteries must be tied before an animal is killed, and that at least three-quarters of the entire pulmonary system shut out before the arterial tension in the body is the least altered. Therefore he reasons that in man there is never such a degree of embolism

¹ Read before the Boston Society for Medical Observation, December 7, 1891.

² Deutsh Zeitsch. f. Chirurgie, Bd. 12, s. 118.

of the lung capillaries that death must result; and he was never able to produce this in animals even by direct intravenous injection.

On the other hand, it is the fat which has passed the lungs and reached the central nervous system that is the cause of death.

In answer to the third question, his experiments and clinical evidence (to be mentioned later) point to the kidneys as the organs by which the greater part is eliminated. A smaller part is undoubtedly burned up in the system.

Of the symptoms noted, one of the most striking was the constant fall in temperature. When large quantities of oil were used this fell 9.5°C . in nine hours in one case, and in another 7°C . in one and a half hours. In those cases in which death did not result, the return to normal was accomplished in about the same time as the fall.

Another symptom was dyspnea, due to the loss of oxydation of the blood. This often was only transitory; but may be persistent and very urgent.

Slight hemoptysis, due to infarction, has also been noticed. Edema of the lungs was never seen in any of his experiments although its occasional occurrence may not be denied.

The most important clinical symptom of fat embolism is the presence of oil in the urine. He examined this from a number of fracture patients, and was able in nearly all cases to demonstrate it to a greater or less degree. The oil did not appear in but a few cases as a continuous sheet on the surface, but as a whitish, slimy cloud in the upper part, at times three centimetres thick. It would not be recognized as fat by the eye alone; but with the microscope there were seen numerous very small, round drops, which were highly refracting, and had a fine dark border. At first, they might be regarded as bacteria, but the reaction with osmic acid and recrystallization after extracting with ether proved their true nature. A curious fact was ascertained, namely, that the elimination is not continuous, but interrupted. Fat was first noticed on the second, third and fourth days after the accident, then again from the tenth to the fourteenth day, and rarely once or twice again with intervals of from six to ten days between.

A marked pallor of the skin and mucous membranes was noticed in all the animals experimented upon.

In the fatal cases there was great irregularity of respiration, marked at the end by superficial respiration alternating with deep and spasmodic inspiratory movements.

These again point to anemia of the brain, and death followed from paralysis of the respiratory centres, while the heart still continued to beat.

He last of all analyzed one hundred and seventy-seven reported cases, and found only fourteen in which death could be attributed to this cause alone, according to his standard.

The clinical picture which he draws, is as follows:

- (1) Certain proof of periodic occurrence of fat in the urine.
- (2) Transitory attacks of dyspnea.
- (3) At times occurrence of slight hemoptysis without fever and usually without dulness or rales.
- (4) Diminution of temperature.
- (5) Irregular action of the heart.
- (6) Collapse, with extreme pallor of the skin and mucous; at first, shallow respiration, at times broken

by a deep sighing inspiration, later, Cheyne-Stokes' phenomena.

(7) Spasms of different kinds or paralyses, which in the experiments were usually bilateral.

(8) Diminution of reflex irritability.

If the history of the case given at the beginning is now reviewed, it is hardly just with data given to ascribe the death to fat embolism alone.

The death within the first week, the dyspnea, and the rapid fall in temperature in the last few hours are the clinical features which can be best brought in accordance with picture as drawn above. On the other hand, the fever during the first three days, the paralysis of the intestines with extreme gastric disturbance (although these two latter might be of central nervous origin) would rather point to a septic infection. This, however, had failed to localize itself either in the spleen or serous surfaces. The only positive evidence were the fat emboli in the lungs. It is now seen that the failure to examine the brain was a grave omission.

With the data at hand, the case is best regarded as one of septicemia with fat embolism, in which the fatal result cannot be attributed to either alone but to both as factors.

The two important points brought out by the above consideration, are:

(1) On the clinical side, that the urine of patients with fracture should be carefully watched from the second to the fourth day for the presence of free or emulsified fat.

(2) On the pathological side, that unless found in the brain the cause of death cannot surely be ascribed to fat embolism.

OBSERVATIONS ON ALBUMINURIA IN SCAR-LATINA.

BY JAMES W. DUDLEY, M.D.,
Medical House-Officer, Boston City Hospital.

(Concluded from No. 6, page 146.)

TAKING the above standard as to the presence of nephritis there were found 18 cases out of the whole 100 which developed nephritis; that is, in 18% of the urines were albumen and casts found. Of these, eight were of the more severe type, and 10 the variety spoken of as catarrh.² One case only began as a catarrh and later developed into a severe nephritis. The catarrh was first noticed the third day of the disease, and on the eighth day, as desquamation was getting well-established, the albumen increased in amount, and epithelial and blood casts and free blood appeared. In this case the high temperature of the eruptive stage was prolonged evidently by the nephritis. This case is interesting as showing how the catarrh may terminate, a method of termination, however, which seems to be rare. The case is classified in the following statistics as one of severe nephritis.

Scarlatinal nephritis is said to occur most frequently between the ages of five and nine.³ The age of the patients having nephritis in this series of cases is shown

² As has been said it seems impossible to draw a *definite* line between mild and severe nephritis from the urinary examination, but for practical purposes it has seemed best to speak of such cases as presenting normal or high-colored urines with a trace of albumen and a few hyaline or granular casts only. In research, and those in which any way gave evidence of more serious renal changes, such as blood or fatty elements, as the more severe form of nephritis. Only in one or two cases was there difficulty in deciding which variety the case should be called.

³ See Guy's Hospital Reports, vol. xxxi, 1889.

below, together with the number of cases occurring at the several ages.

SEVERE NEPHRITIS.

Age	4 or less	4-8	8-16	Over 16
No. of cases . .	4	2	0	2

RENAL CATARRH.

Age	4 or less	4-8	8-16	16-20	Over 20
No. of cases . .	3	2	0	1	4

Total cases, 18.

It will be seen that the largest number of cases of severe nephritis occurred in patients four years of age or under, and six of the eight were persons not over seven years of age. The other two cases were in adults (age nineteen and thirty-four). The period from eight to eighteen inclusive, was free entirely from severe nephritis. The mild variety was found in adults and children with equal frequency, five being under seven years old and five over sixteen. Young children, four or under, presented this complication less frequently than did adults over twenty. This is in marked contrast with the more severe variety to which children appear to be much more liable. The absence of any form of nephritis between the ages of eight and sixteen inclusive, is noteworthy. The complete absence of nephritis during this, the most vigorous period of childhood, is doubtless a mere chance in this set of cases, but that there is a diminished liability for children during this period of life to develop nephritis is at least strongly suggested.

It would seem improbable that sex could have any influence, predisposing or other, in the development of nephritis. It is, however, worthy of observation that the majority of cases of severe nephritis occurred in the male sex, 62.5% of the severe cases being in males. Of the cases of simple catarrh the majority occurred in females, 30% only being in males. The only suggestion which this observation seems to offer is that scarlet fever is possibly more apt to be a severe disease in females.

The time of year does not seem to have very much influence in the causation of nephritis. It was slightly more common during December, January and February than at any other time. Renal catarrh seems not to have been at all influenced by season. The total number of cases in the hospital at any one time made no change in the proportion of cases developing nephritis. Unfortunately, however, the time covered by this series of cases did not include any periods when scarlatina was especially frequent in the community, and therefore the influence of epidemics in the frequency or severity of nephritis cannot be stated.

The fact, so frequently observed in regard to scarlatinal nephritis, that no dependence can be placed on the severity of the fever as to the probable development of nephritis is amply borne out by these cases. In fact, so far as they show, severe nephritis is more apt to follow a mild case of scarlet fever than a severe one. In but two of the eight cases of severe nephritis was the temperature above 101.2° at entrance (time of entrance being on the average the second or third day of the rash), and the average temperature for all the cases of nephritis was 101.53°. This is in marked contrast with the cases of renal catarrh, in which the

temperature for the whole number averaged 102.6°. In but one case was it less than 101.4° at entrance. Thus mild nephritis or renal catarrh does seem to be influenced markedly by the severity of the fever, being probably a part of the disease itself. The contrast in the severity of the disease in which the two forms of nephritis developed is shown as follows:

Severe nephritis, 75% in cases with a temperature of 101.2° or less.

Renal catarrh, 90% in cases with a temperature of 101.4° or more.

In estimating the day at which the nephritis began, the beginning of the eruption has been taken as the first day, on account of the impossibility in many cases of ascertaining definitely any symptoms occurring earlier. The time at which the nephritis first made its appearance is shown below:

NEPHRITIS.

Time of nephritis . .	1st week.	About end of 3d week.	Beginning of 4th week.
Number of cases . .	3	4	1
Desquamation . .	Not begun.	In progress.	

CATARRH.

Time of catarrh . .	1st week.	Late in 2d week.	Very late (3d week).	Unknown.
Number of cases . .	5	2	1	2
Desquamation . .	Not begun.	During early part.	Finished.	

Nephritis, therefore, occurred most frequently about the end of the third, or beginning of the fourth week, during the period of desquamation, and in no case beginning with the beginning of desquamation, not rarely, however, it starts during the first week, before desquamation has set in. The most common time for catarrh is during the first week, when the temperature is high and the disease active.

The duration of the nephritis in those cases where the actual time was observed, presented some degree of regularity. In half the cases it lasted thirty to forty days. One well-marked case only seven days, one about twenty. The duration of the others was not observed. Five weeks, therefore, seems to be about the average length of time covered by many cases. No regularity at all is shown by the cases of catarrh. They lasted from four to forty days.

The relation of albuminuria and nephritis to some of the other common complications of scarlet fever is worthy of note. The most common of all the other complications is *otitis media*. This occurred in 10% of the cases. In five the left ear being the one affected, and in four the right, and in one both ears. The duration of the otitis was extremely variable, as also was the time of its beginning. In half the cases the ear trouble was first noticed twenty-five days or later after the beginning of the fever. The average duration was twenty-seven days. The actual length of time varied from twelve to fifty-three days. Out of all the cases of otitis 60% presented albuminuria, and 20% only had nephritis. In but one case was renal catarrh present. It has been said that in cases having both nephritis and purulent disease of the mid-

dile ear the urine clears up as the otitis subsides, but in the limited number of cases with both observed in this series this coincidence, if such there be, was not found. It is interesting to note in passing that the majority of the cases of otitis (70%) developed in cases with comparatively mild fever, that is, in those with a temperature not over 102°. Otitis seems, therefore, like nephritis, a complication quite as apt to occur in mild as in severe cases of scarlatina.

Diphtheria was said to be a complication in six cases. Whether these were all cases of true diphtheria developing upon scarlet fever, the writer cannot say. At any rate, they were characterized by very severe angina and well-marked false membrane. In five of these, or 83%, there was albumen in the urine; in but one case was nephritis present.

Pneumonia occurred in three cases, two of which ended fatally. All presented albuminuria. Nephritis was not observed in any of them.

Severe abscesses of the neck were present as a complication in three cases. In one nephritis occurred, in one simple albuminuria, and in one the urine was normal throughout.

Out of three cases of *inflammation* of one or more joints, one had nephritis, one catarrh, and one no albumen.

Measles complicated two cases, beginning the twenty-third and twenty-fourth days of the original disease. Albuminuria was present in one, nephritis in neither.

Summing up, in brief, the results regarding complications, it is found that 25 out of the 100 cases presented some of the above complications, not including nephritis. Out of these 72% had albumen at some time, 20% had nephritis, 12% had catarrh, 40% had simple albuminuria, 28% had no albumen at any time. Complicated cases, therefore, present a much larger proportion of albuminuria and severe nephritis than do simple cases, while the proportion of cases with catarrh is not materially changed. It is noteworthy, also, that 63% of the cases of severe nephritis were in patients also having some of the above complications.

Scarlatinal nephritis seems to differ in one very important respect from acute nephritis of other origin.

So far as the writer has observed it is quite apt to develop quickly without giving any signs of its presence in the appearance of the patient. Edema is apparently not a common accompaniment in the earlier part of the case. Nearly all the cases in this series were found by the urinary examination before any other evidence of their presence had been observed.⁴ Occasionally, a slight rise in temperature accompanies the onset of the nephritis. Close and constant attention to the urine is therefore the only way to make sure that nephritis is not developing.

The writer regrets that he is unable to say anything about the *prognosis* of the nephritis. In all but four of the cases of scarlet fever here recorded, recovery took place. In none of these four fatal cases was nephritis detected. Death in two was due to pneumonia, in one to diphtheria. In none of the cases did nephritis become chronic. The total number of cases of nephritis is, however, too small to be of any positive value as regards prognosis.

The results obtained from the comparison of these 100 cases of scarlet fever may be summed up as follows:

⁴ See British Medical Journal, 1889, ii, p. 657.

ALBUMINURIA.

Albuminuria was present at some time during the disease in 49% of all the cases; it was slightly more common in males than in females. Early albuminuria maintains a pretty constant relation to temperature, being of much more frequent occurrence in cases with high temperature. It was present much more frequently in adults than in children when the temperature was the same, and of almost universal occurrence in adults with high temperature; it does occasionally occur in cases with a low temperature; over-crowding and poor ventilation were not factors in its production. Early albuminuria occasionally is caused by or leads to renal catarrh, very rarely to severe nephritis; catarrh is not apt to be developed into severe nephritis.

NEPHRITIS.

SEVERE NEPHRITIS.

In 8% of all cases of scarlet fever.

Is most common in children under 9 years of age.

Least common time, 8 to 18 years of age.

60% in males.

Rather more common in winter than in summer.

Is not influenced by the number of cases in the hospital (over-crowding and poor ventilation).

Is as common after mild as after severe cases of scarlet fever.

Generally begins between third and fourth week of the disease.

Generally during desquamation.

Common duration, 5 weeks.

RENAL CATARRH.

In 10% of all cases of scarlet fever.

Occurs with equal frequency in children and adults.

Least common time, 8 to 16 years of age.

70% in females.

Season has no influence.

Idem.

90% in severe cases.

Most common in first week.

Most common time before desquamation.

No regularity of duration.

COMPLICATIONS.

Excepting renal catarrh, *otitis* is the most frequent complication of scarlet fever, occurring in 10% of all the cases. It is as common in mild as in severe cases of scarlatina. It sometimes begins early, but usually not till the period of desquamation and sometimes very late. Sixty per cent. of cases with otitis have albuminuria, 20% nephritis.

Most of the cases complicated by *diphtheria* present albuminuria. Nephritis is not especially common. Of the other individual complications no summary is needed.

It should be said that the proportion of cases in this series presenting albuminuria is larger than is generally supposed to occur, but the percentage of cases with nephritis agrees very closely with that observed elsewhere.

CUTANEOUS ERUPTIONS IN INFLUENZA.¹

BY CHARLES F. MASON,
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The following cases are cited as a contribution to the literature of that many-sided disease, influenza, particularly as very little has been written about this phase of the disorder:

CASES I and II. A. B., aged six months; first seen January 1, 1892. Mother says child has been sick for several days with fever, cough, vomiting and constipation, and to-day a rash has appeared which she thinks is measles. Upon examination I found tongue thickly coated, chest, abdomen and back covered with

¹ Published by authority of the Surgeon-General.

a discrete eruption, pale, but exactly like that of a mild case of measles, and well-marked broncho-pneumonia; there was high fever, but not having a thermometer temperature was not taken; no catarrhal symptoms; no redness of tongue or pharynx. Influenza was then prevalent; the eruption was the only point of resemblance to measles; there had been no measles within 150 miles of us for many months, and I diagnosed influenza, but nevertheless isolated the patient and took the same precaution as if the disease had been a contagious one. The next day the eruption had spread over the entire body, was confluent and much more vivid except upon the face; other symptoms as before. Though still in doubt, I thought best to treat the case as one of measles, and reported it as such to the Surgeon-General of the United States Army.

The same day, January 2, 1892, a half-breed infant of about nine months was brought to me by its mother, a Shoshone Indian squaw, with exactly the same symptoms except the pneumonia, the eruption being most typical and everywhere confluent. This second case had been brought in that day from a "tepee" on Upper Big Wind River, about twenty-five miles distant, and I was informed by the mother that there were one or two other cases of the same nature in that region.

January 3d, the eruption in both children had almost entirely faded, and on the 4th was gone, without the slightest desquamation.

The second case I did not see after this date, but heard that the child made a good recovery. The first has been constantly under my observation, its recovery from the pneumonia being slow and difficult. In the family of the latter there were two other children, one of whom, with the father and mother, was subsequently affected with the characteristic symptoms of the grip, but without any eruption.

CASE III. Nez-Percé, Shoshone Indian soldier, aged twenty-one and one-half years; admitted to hospital, January 9, 1892. Complains of headache, cough, pains in the chest and debility. Upon examination I found acute laryngo-bronchitis, a coated tongue and a few small papules like those of acne upon face and chest; temperature 100°. The next morning, on visiting the ward, I was astonished to find his face, chest and back covered with discrete superficial vesicles, many of them markedly umbilicated but without inflammatory bases. Temperature: A. M. 99.6°, P. M. 102.8°; eyes slightly injected; complains only of severe frontal headache.

January 11th. Vesicles have become pustular; no new ones; feels much better. Temperature: A. M. 100.8°, P. M. 101.4°.

January 12th. Feels well; pustules rapidly drying up.

January 16th. Spots dried up rapidly, forming thin crusts, which dropped off leaving no scar.

This case so closely resembled varicella that the patient was isolated for several days. However, the soldier had not been absent from the post; varicella had not been heard of in the country for many years, and I considered that disease excluded. The other symptoms were those of the grip, and my experience with the two cases referred to above led me to make that diagnosis here also.

Up to this date, January 25, 1892, I have not seen or heard of any more cases of eruptive disease in this neighborhood; and the Agency physician, who treats a large number of Indians, says he has not met with

any except one case of influenza with a vesicular eruption like the one referred to.

My cases were very puzzling to me at first; but their history, subsequent course, absence of any of the symptoms of the exanthemata except the eruption and fever, and the presence of the characteristic symptoms of grip, the absence of any probable source of contagion, and the fact that no new cases developed, all led me to the inevitable conclusion that the history of influenza has not yet been fully told.

Clinical Department.

THREE CASES OF PUS IN THE FEMALE PELVIS; ABDOMINAL SECTION.¹

BY WALTER L. BURRAGE, A.M., M.D., OF BOSTON.

CASE I. Pyosalpinx. Large tube of pus. S. J., single, a domestic, thirty-two years of age and a native of Nova Scotia, entered St. Elizabeth's Hospital, June 3, 1890. The diagnosis made in the Out-patient Department was retroversion. She was a thin woman, rather pale, and gave a history of chronic dyspepsia. It was questionable whether she had had gastric ulcer a year before. Her general health was poor. The chief complaint at the time of entrance was of frequency of micturition and general weakness. Her catamenia were regular, scanty (only one napkin), and attended by no pain. Local examination showed what appeared to be a large uterus in the third degree of retroversion. The sound was not passed because there was some suspicion of pregnancy. She was treated with packing, and kept under observation until June 23d, when she was anesthetized.

Dr. F. W. Johnson saw her with me then in consultation. We found the mass behind, previously thought to be the fundus of the uterus, to be a cyst the size of a large Florida orange, firmly adherent and resistant, though much less resistant than when the patient was not under the influence of an anesthetic. It had a doughy feel. The uterus was pushed forward and to the right, the sound entered its cavity two and three-quarters inches. There was a nodule on the right side the size of a small duck's egg.

From the situation of the cyst, in Douglas's pouch; from its doughy feel; from the fact that the patient had had no chills, no elevation of temperature since she had been under observation, and from the absence of history of previous inflammatory attacks, it was considered that we had to do with a case of dermoid cyst of the ovary in all probability. It was thought best to keep her under observation, and, if possible, build up her general strength, meanwhile watching the tumor.

After six weeks the tumor had increased in size a little; she had had two slight attacks of pain referred to the lower abdomen, and an elevation of temperature of one or two degrees for a day or two, shortly after the ether examination; the rest of the time the temperature had been normal. In spite of a generous diet and tonics, her appetite continued poor, the bowels were obstinately constipated and her strength not improved. Accordingly the proper course seemed to be to remove the tumor. August 11th, with the assistance of Drs. W. M. Conant, E. L. Twombly and

¹ Read before the Warren Club, Boston, December 1, 1891.

the House-surgeon, I opened the abdomen. Dr. John G. Blake was present. The usual antiseptic precautions were observed. The fingers inserted through the abdominal wound came at once upon a large cyst on the left side of and behind the uterus, very firmly adherent to the walls of the pelvis, and to the uterus. As many as five strong bands of adhesion were ligated with silk and divided, and numberless smaller adhesions were separated with the fingers. After considerable manipulation the cyst was entirely freed and delivered intact through a four-inch abdominal incision. This cyst proved to be a stomach-shaped dilated tube filled with pus. It measured four inches in length, three inches in diameter at its largest part, and contained about eight ounces of pus.

On the right side was a convoluted tube about three-eighths of an inch in diameter, and the ovary, both firmly adherent to the sides of the pelvis and the uterus, and to each other. It seemed at first to be next to impossible to remove the appendages on this side without badly lacerating the soft parts of the pelvis. An attempt was made to ligate the broad ligament from above downward with interlocking ligatures. After a few were tied it became evident that this method would leave a large and clumsy pedicle, besides running a chance of including the ureter, so I decided to tear off the posterior adhesions, pull up as much of the tube, broad ligament and ovary as possible, ligate and remove. This was done accordingly.

The parts were so matted together it was not possible to say whether any portion of the tube or ovary had been left behind. The tube removed presented all the appearances of chronic suppurative salpingitis.

There was considerable venous oozing. The abdomen was flushed with hot water, the cul-de-sac sponged, and a drainage-tube placed in the lower angle of the wound, which was closed with silk, dusted with iodoform, and dressed with baked gauze, strapping, cotton and a binder. Length of operation two hours.

The patient's condition during the operation was poor. She required stimulation several times, but rallied fairly well, however. The temperature was below 100° for the first forty-eight hours, the pulse was rapid all along, being about 120. The tube was removed at the end of twenty-four hours. On the third day the temperature rose a little and vomiting set in. Gas was not passed per rectum for sixty hours. She was given salts and then calomel on the fourth day, without result. She had the anxious countenance noted in cases of peritonitis, and a decidedly septicemic odor was noticeable in the room. The pain was slight. Beginning distension of the abdomen and a temperature of 103.8° in the morning, with regurgitation of dark-colored fluid preceded the fatal issue, which took place from heart failure on the fifth day.

I made a partial autopsy twenty-four hours after death, and found: Marked post-mortem discoloration of the abdomen, lips of wound not firmly adherent, no pus. Incision enlarged upward to ensiform and downward to symphysis. Abdominal cavity and pelvis contained no fluid. Intestines distended with gas and injected, no effused lymph, no adhesions. They contained a small amount of thin brown liquid similar to that regurgitated during life. Walls of pelvic cavity a dirty green color (from decomposition). Nothing abnormal about the condition of either pedicle: no trace of either ovaries or tubes found. The sigmoid

flexure of the colon entered the true pelvis anterior to its normal situation, being at a point half-way between the promontory of the sacrum and the middle of Poupart's ligament. It was glued to the left pedicle and to the edge of the pelvis. The calibre of the gut was not encroached on, and the walls were not injected or thickened. Diagnosis: Atony of intestines from septic absorption.

CASE II. Chronic pelvic inflammation, with abscess discharging into the rectum. Intraligamentous cyst. S. A. U., widow, thirty-two years of age, a native of Nova Scotia, entered St. Elizabeth's Hospital, June 29, 1891. She gave the following history: Family history negative. She never knew what it was to be sick, with the exception of a slight attack of inflammation of the bowels fifteen years ago, until she had the grippe in 1889, and since then she has never been well. Has had three children, no miscarriages. The last child was born fourteen years ago. In October, 1890, she was in the Rhode Island Hospital with an attack of "inflammation of the womb." She was confined to the bed for several weeks at that time, and was told that she had an abscess, and operation was advised. Since then the abscess has discharged into the bowel several times (four or five). She would have sharp pain in the abdomen for several days getting relief finally by the passage of an ounce or two of matter. The last discharge was two weeks before entrance, at the time of the catamenia, a nearly constant discharge since with so much pain that she is "all tired out," as she expresses it. Bowels inclined to constipation. Much trouble with accumulation of gas in the intestines, and feels a "lack of power" in the rectum. The catamenia were established at twelve and one-half years; regular every four weeks up to two years ago; since then every three to four weeks; of three to five days' duration, and six to ten napkins at first; lately, of seven to nine days' duration, and fourteen to eighteen napkins are used. General strength good. Patient of large frame, well developed and nourished. Says that life has become a burden to her because of the repeated attacks of pelvic pain and her consequent inability to pursue her daily occupation, that of seamstress, for any length of time.

Physical examination showed a large mass of inflammatory exudate nearly filling the pelvis, and surrounding the rectum so as to encroach on its calibre about three inches up from the anus; the uterus three inches deep, lying on top of the exudate and in front. She was kept quiet, given two large hot douches a day, laxatives for the bowels, and a general diet, and every other day the vault of the vagina was painted with Churchill's tincture of iodine.

At the end of a month, during which time she had had on two occasions a discharge from the rectum of mucus streaked with blood and accompanied by pain, it was decided to give ether and make a thorough examination. The exudate had largely cleared away at this time.

July 29th, Drs. R. A. Kingman and Conant saw her under ether, with me. We mapped out a fluctuating mass the size of a small orange, in the right side of the pelvis, and also an indurated swelling about the size of a lemon around the rectum in the left pelvis. Query whether they were connected or not. The gut barely admitted the tip of the examining finger at the seat of the swelling. An exploratory incision seemed

to offer her the best chances; she readily consented, and the operation was done August 10th. I was assisted by Drs. G. H. Washburn and the House-surgeon. Drs. Kingman and H. P. Jefferson, of Lowell, were present. The incision was three and one-half inches long. The abdominal walls were about three-quarters of an inch in thickness. Two fingers inserted in the abdomen revealed the presence of a cyst in the right pelvis firmly bound down, and apparently under the peritoneum: the convoluted right Fallopian tube, normal to the feel, could be made out lying on top, the ovary was not felt. The uterus was in the first degree of retroversion, though pushed forward as a whole, and adherent on the left side to an indurated swelling about the size of a small lemon. The cul-de-sac was obliterated by adhesions.

On the right side I thought I had to do with either an intraligamentous cyst, a simple cyst of the broad ligament, or pus burrowing beneath the peritoneum, and in the folds of the broad ligament. The uterus was partially freed from its adhesions after considerable manipulation, and it became possible to push a finger into the cul-de-sac. With Dr. Kingman's finger inserted in the rectum it was plain to the examining finger in the abdomen that the gut passed through the indurated mass. On Dr. Kingman's withdrawing his finger, pressure in the cul-de-sac caused pus to flow from the anus.

It being impossible to remove the swelling on the left without badly tearing the gut, and as a resection low down in the pelvis is a difficult procedure, even when there are no adhesions, the question arose, what should be done as to the cyst on the right side. If a cyst of the broad ligament, it would cause her little discomfort, and if emptied might not refill. As it was so deeply situated that it would be out of the question to open by the abdomen and stitch to the lips of the wound, and as enucleating would, if successful, leave her with the chief source of her trouble still untouched, and at the same time lessen her chances of recovery, more particularly if the cyst should contain pus, I decided to break up all possible adhesions about the uterus and the inflammatory mass, close the abdomen, and aspirate the cyst per vaginam. Accordingly the toilet of the peritoneum was made, the wound was closed with silkworm gut sutures and dressed with aristol, baked gauze, strapping and a binder. No drainage.

With a finger in the vagina as a guide, an aspirating needle was plunged through the cul-de-sac into the cyst, and about an ounce of clear, odorless, straw-colored fluid that contained one-half per cent. of albumen was obtained. The bladder was catheterized and the patient put to bed in good condition. There was a little venous oozing from the needle puncture in the vagina. Time of operations, one and one-half hours.

The convalescence was uneventful. Gas was passed in fifteen hours, the bowels moved naturally after a Seidlitz powder on the morning of the third day; the temperature was not above 100.6° at any time, and was not above 99° after the first day.

August 28th there were some fulness and sensitivity in the cul-de-sac. She was put on douches, and the vault of the vagina was painted with iodine. Early in September she had diarrhoea associated with a discharge of pus. Dr. Kingman, under whose care she came after September 1st, treated her with packing.

October 3d, then having left the hospital, she re-

ported to me that on moving about she had occasional pain of a throbbing character in the right groin. Bowels regular and she had a more natural feeling in the rectum. By vaginal and rectal examination no induration to be felt on the left side, and lumen of gut not narrowed. On the right side the cyst had filled again and was the size of a duck's egg. Uterus forward, fairly movable, two and three-quarters inches deep.

November 5th, she said she had had "labor pains" early in October; pains lasted an hour and a half and were eased by a very hot douche. Three or four days subsequently the catamenia came on. More flow than usual. Has gone back to work. Hasn't felt so well for over two years.

November 15th. Treatment with vaginal galvanism begun.

November 29th. Has passed through a menstrual period of four days without any pain; five towels. Mass much smaller, no fluctuation, no sensitiveness. Much pleased at her improved health.²

CASE III. Acute pelvic inflammation. Abscess of ovary. E. A. F., twenty-four years old, married, a native of Nova Scotia. She entered St. Elizabeth's Hospital July 14, 1891, complaining of severe pain across abdomen accompanied by fever and loss of strength. This was a well-developed, fairly-nourished woman, somewhat anaemic, and of a neurotic temperament.

Examination of the abdomen and vagina revealed abdomen a little distended, walls very tense and the entire pelvis filled with hard, unyielding inflammatory exudate. On the left side there was an indistinct elevation of the mass into the abdominal cavity. Sensitiveness to examination not marked. Temperature 100°. The exudation was of exceptional size and hardness.

The patient gave a history as follows: Married seven years, but never pregnant. Never well since her catamenia were established at fifteen years of age. They had been regular every four weeks, but accompanied by fainting spells and pain in the back. Usually confined to the bed for the first two days of the sickness. A profuse flow, less in quantity of late, about twelve napkins the first three days, then a few for the remainder of a week. For the last two years she has had several slight attacks of pain in the abdomen, the pain never harsh enough to confine her to bed. Has always had a leucorrhœa, and has suffered with constipation. She was seen at the out patient department of St. Elizabeth's in June, 1889, and a diagnosis was made of retroversion; left ovary low down and sensitive.

June 19, 1891, her menstrual period being then due, she was seized with excruciating pain in the lower abdomen. There was no apparent cause for the attack. The flow began shortly and was very profuse. From this time until she entered the hospital, July 14th, she had suffered with almost constant pain and fever, and had been treated by rest in bed, hot douches, poultices to the abdomen, and morphine suppositories *pro re nata*. At entrance she was put to bed, given

² February 13, 1892. Mrs. U. had twelve treatments with galvanism, the current being 10 milliamperes. December 21st, nine were negative and three positive, the vaginal electrode being placed against the cyst; twenty to thirty milliamperes; sittings of six to ten minutes twice a week.

January 25th, when she was last seen, there was nothing to represent the cyst but a small amount of non-sensitive thickening in the cul-de-sac. She was working at her trade, and felt well in every way.

two prolonged hot douches a day, and every other day the vaginal vault was painted with Churchill's tincture of iodine. The bowels were kept open with saline laxatives, and antipyrine, with an occasional opium suppository, administered for pain.

She remained in the hospital a few days only, owing to homesickness. I saw her at her home during July and August, and continued with the treatment just outlined. I have the following notes of her condition during that time:

July 18th. Temperature by the vagina 102.6°. More pain; no chills.

August 1st. Pain less. No temperature by the vagina for the last week. Less induration in the pelvis. Is taking two grains of quinine t. i. d., and a good amount of liquid and semi-solid diet. Sitting up a short time daily.

August 11th. Was called to see her on the night of August 8th. It seems that while sitting up she had been seized with a gripping pain of great severity in the right abdomen; she partially lost consciousness for a few moments. Her mother, who was present, described a marked rigor and gasping for breath, with blueness of the lips. The whole attack lasted only a few minutes. On my arrival, an hour or so later, she was feeling weak, but in other respects as before. Temperature and pulse normal. Nothing developed by a careful vaginal examination. Heart and lungs negative. Never had a similar attack before. She attributed the disturbance to having eaten baked beans contrary to orders.

August 21st. The induration in the pelvis has been clearing up all the time and there seems to be coming out of it in the left side a separate mass the size of a small cocoanut. She had her catamenia from August 14th to 21st, the first since June 19th. Much less pain, but more flow.

August 25th, Dr. F. W. Johnson saw her with me in consultation. Under ether we made out a mass with irregular outline, size of a small cocoanut, in the left side of the pelvis, and pushing the uterus, which was three and a quarter inches deep, well to the right. Mass firmly adherent to the uterus along its right margin, more firmly below than above. A small body the size and shape of a bullet's egg, in the right side of Douglas's pouch. Diagnosis: Cyst of ovary or fibroid; salpingitis. Advice: Exploratory laparotomy.

The patient entered St. Elizabeth's again, and August 31st, with the assistance of Dr. Conant and the House-surgeon, I opened the abdomen. Dr. Johnson was present. An incision three inches in length was made in the usual situation after due antiseptic precautions. The abdominal walls were very tense, and there was considerable oozing. The omentum was lightly adherent to the parietal peritoneum. The large mass on the left was found to be adherent to all the surrounding structures. Many of the adhesions were fresh and easily separated; there were no strong adhesions to the intestines. Two cysts as large as English walnuts, with transparent walls and clear, mucilaginous contents, presented on the surface of the mass. These undoubtedly caused the irregular outline noted at the ether examination.

In the cul-de-sac on the right side, could be felt the ovary, size of a hazelnut, and the tube, size of one's little finger, both bound down firmly. The adhesions on the left were broken away gradually and an attempt made to deliver the cyst. When nearly out it rup-

tured, giving exit to about four ounces of what appeared to be pus. It was of a gelatinous consistency and odorless. Some of it got into the peritoneal cavity. A pedicle formed by the broad ligament and adhesions was included in a Dawson clamp, ligated, and the cystic mass removed. The ovary and tube on the right side were freed from adhesions, raised into the wound, the broad ligament clamped close to the horn of the uterus with Spencer Wells bent forceps, ligated, and the appendages removed. The fundus of the uterus was left in good position, forward, and apparently retained there. There was very little oozing. The abdominal cavity was thoroughly irrigated with hot filtered water in which was a little salt, the cul-de-sac sponged dry, and a drainage-tube left in place. The abdominal wound was closed with silk, dusted with aristol, and dressed with baked gauze, cotton and strapping. No binder was used. Time of operation, three-quarters of an hour. Patient put to bed in good condition. She reacted well. The temperature went up to 100.2° on the second and third nights, after that it was not above 99°. Pulse 70 to 80. Gas was not passed until fifty hours. No nourishment for forty-eight hours. Abdomen flat all the time. The bowels were moved on the third day only after the exhibition of salts, calomel and castor-oil. She was annoyed by obstinate constipation for several weeks subsequently. The tube was removed in twenty-four hours, the gauze in it being soaked with a little serum, and the opening in the wound closed with a stitch left loose for the purpose. The remaining convalescence was uneventful. She left the hospital at the end of September in good condition. Vaginal examination, September 26th, showed the uterus in good position and no evidences of inflammatory effusion in the pelvis. I have heard that she has been in good health since.

Dr. F. B. Mallory, to whom the specimens removed were submitted for examination, reports: Chronic ovaritis, with abscess formation. Dr. Whitney, who kindly looked over the specimens also, agreed with Dr. Mallory that neither Fallopian tube was diseased, beyond some external thickening due to the surrounding inflammatory action.

My object in reporting these cases is to emphasize the difficulty that attends the diagnosis in similar conditions. I know of no affections in the domain of gynecology where the symptoms and rational signs are more misleading.

In pelvic abscess of acute character the diagnosis may be made with comparative ease. By pelvic abscess I refer to a collection of pus originating in the cellular tissue about the uterus. On the other hand, when the condition is chronic and there is pus within or outside of the peritoneum; if within, from a suppurating ovary, hematocoele, extra-uterine fœtation or a leaky tube walled off by circumscribed peritonitis; if without, from a peri-rectal abscess or an iliac or psoas abscess burrowing in the pelvis, we are apt to find features that lend much uncertainty to the diagnosis.

Case I illustrates how little general disturbance may be caused by the presence for a considerable time of a large quantity of pus in a pyosalpinx. There were no chills, no fever, no sweating, no recurrent attacks of peritonitis, and the mass was not the characteristic tense, tender and fluctuating sausage-shaped swelling of the text-books. The chief symptoms were frequency of micturition and general weakness.

In Case II we have an instance of a peri-rectal abscess with manifest symptoms associated with a cyst of doubtful character on the opposite side of the pelvis, the diagnosis being made clear only by operation. One interesting feature of the case was the rapid disappearance of the abscess and the surrounding inflammatory thickening.

In Case III the presence of pus gave rise to unmistakable symptoms up to the time of the subsidence of the inflammatory attack in July. After that time there was nothing to show that she had a good-sized abscess in her abdomen.

It has been my practice during the last three years to make notes of every abdominal operation at which I have been present as soon as possible after the operation, and to fill out the notes, later on, with whatever facts came to my knowledge.

Of 180 cases by various operators, I find that 26 were primarily cases of diseased tubes, as determined at the time of operation; five of the 26 were large tubes of pus. It so happened that I had partial care of all of these five, and was familiar with their previous histories. In only one were there symptoms typical of the presence of pus.

Case III was the second largest pus tube it has been my fortune to see removed intact. The largest was one of two removed from the same patient by Dr. Clement Cleveland, of New York, in January, 1890. The case was reported, and the specimen shown, before the New York Obstetrical Society, and the larger tube is figured in Mundi's edition of "Thomas on the Diseases of Women." It measured six inches in length and three in diameter at its largest part. The other tube, ruptured during its removal, was four inches by three. The patient was twenty-four years old, married one year, and sterile. She had noticed a swelling in the abdomen for six months. Her only complaints, beyond the presence of the swelling, were loss of flesh and sterility. The tumor had been previously diagnosed by competent men as a dermoid cyst or fibroid.

Another of the five cases was one operated on by the late Dr. J. B. Hunter, in November, 1888. The woman was twenty-three years of age, married five years, sterile. She had inflammation of the bowels four years before, and was in bed two months with the attack. She was the picture of health. Her only complaint was dyspareunia. There was a sensitive tumor in the cul-de-sac. A pus tube the size of a fist was removed.

I have the notes of a case similar to No. III, in that a fluctuating tumor emerged from a large mass of exudate. The patient was twenty-eight years old, married ten years; had had four abortions at about two months, probably induced; no children. She had suffered with pain in the lower abdomen for six months previously. The diagnosis was pelvic inflammation and pyosalpinx. At the operation the tumor was found to be a very adherent multilocular ovarian cyst containing clear fluid. There was no disease of the tubes.

THE CORRECTION OF PROSTITUTION.—An association has recently been founded at Buda-Pesth with the objects of combating the evils of prostitution, of redeeming its victims, and of establishing and maintaining a free dispensary for the treatment of poor patients suffering from venereal disease.

Medical Progress.

NOTES OF PROGRESS IN PHYSIOLOGY.¹

BY JOSEPH W. WARREN, M.D.

LYMPH FLOW AND PRODUCTION.

The question of the lymph formation has been studied by Heidenhain.² His results must modify very materially the view commonly held concerning this process. While the origin of the lymphatic system in the spaces in the tissues may be accepted as settled, and while, also, it may be considered as clear that all structures get their material from the blood only by the intervention of the lymph (with the single exception of Bowman's capsule in the kidney), there is no settled view as to how the lymph furnishes the supply of material required. Heidenhain points out the futility of any view which considers the lymph to be merely a sort of branch of the blood stream bringing the nourishing materials nearer to the tissues. The amount of lymph which passes through the thoracic duct of a resting dog of 10 kilos in twenty-four hours, appears to be from 500 c.c.m. to 650 c.c.m. Movement unquestionably increases this amount, but it is uncertain to what extent, probably, however, usually much less than has been inferred from forced movements which appear to about triple the flow. The amount of lymph which must flow in order that its proteids (4.0%) should supply the requirements of the body, according to Voit, is at least ten times as much. Equally striking are the results of a comparison of the amount of lymph needed to supply the mammary glands of a good cow. The lymph of the thoracic duct is *not*, then, the real tissue lymph, but is merely what is drained off as superfluous material, so to speak, from the lymph spaces when the pressure there has risen to a certain height, and the lymph stream is no exact measure either in its quantity or its quality of the processes going on in the lymph spaces of the various organs. Heidenhain believes that no filtration hypothesis can explain this and the results of his experiments; there is some form of cell activity—a "secretion"—in play.

The influence of changes in arterial or venous pressure had been studied by others, but only on the extremities, and the results favored the filtration theory. Heidenhain examined the effect of changed blood pressure upon the flow from the thoracic duct, and comes to quite other conclusions. Lowering the arterial pressure, through closure of the aorta by means of a rubber-bag filled with water, does not stop the flow of lymph; it goes on for a couple of hours at least. The amount may diminish somewhat, but usually not at all, and the variation stands in no relation to the arterial pressure. Such lymph contains somewhat more solids, but this is not due to any slowing of the lymph stream, and is also less coagulable. Closure of the portal vein caused a rapid increase in the lymph stream, but the amount of solids was much smaller—as Emminghaus had also shown. When the arterial pressure was also much reduced, the same result was reached, but the lymph was at first more concentrated. Closure of the vena cava above the diaphragm, which also of course must lower the arterial blood pressure rapidly, and

¹ The object of the "notes" is not merely to report some things that are new, but also to make more generally known some work that, while not absolutely fresh, has not received the general attention that it deserves.

² R. Heidenhain: *Versuche und Fragen zur Lehre von der Lymphbildung*. *Pflüger's Archiv*, xlii, 209.

greatly increases the lymph flow, and this lymph is much richer in proteid material. In both forms of venous stasis the coagulability of the lymph is greatly lessened. Obturation of the portal vein produces marked hyperæmia of the intestines; but closure of the vena cava causes anæmia of the intestines and hyperæmia of the liver, on account of the lessened inflow of blood due to reduced arterial pressure and of the valves of the veins which prevent the blood, driven inward to the liver, from returning to the intestinal vessels.

It is evident that these are conditions which are not at all in accord with a theory of the lymph formation which relies upon filtration to explain the process, although, of course, no one doubts that filtration may take place through such membranes as are here involved, indeed often does take place under pathological conditions. Only the lymph which forms under high arterial pressure when the portal vein is closed may be considered as in a great measure due to filtration, as shown by the presence of many red corpuscles.

Even more indicative of the existence of some cell activity in the lymph formation and of great therapeutic significance is Heidenhain's discovery of the existence of "lymphagogues"—of substances, that is, which increase the lymph flow either by causing a direct "secretion" from the blood, or by withdrawing water from the tissues ("tissue lymph") and sending it into the lymph and into the blood.

The first class of lymphagogues includes most curious material: muscular tissue of crabs (probably *astacus fluviatilis*), heads and bodies of leeches (both *Hirudo medicinalis* and *H. sanguisuga*), the bodies of various mussels, walls of the intestine (dog), "peptones," white of some eggs.

The muscles of crabs, the leeches and mussels may be extracted with boiling water or they may be dehydrated with strong alcohol and the dried powder afterwards extracted by boiling water. The active substance is then not soluble in alcohol and is not destroyed by boiling. Such a decoction may be injected into the blood (dogs and rabbits) without injury. One dog behaved very much as though afflicted with fleas—the substance causing a sort of urticaria. The lymph flow is commonly increased, and this is not due to changes in the blood flow. A quantitative comparison shows that the lymph has gained water and organic substances but not salts, and that the blood plasma has lost water and organic substances. That this transference of material is no filtration is evident from its character and that it is a cell process—a "secretion"—is shown by the fact that when the blood flow has been shut off for sometime the introduction of such lymphagogic substances causes no increase of the lymph flow—the prolonged anæmia having altered the cells whose activity is involved. "Pepton," by which Grüber's "Peptonum depuratum siccum" is meant—probably much proteose and some real peptone—is another lymphagogue. It also alters the blood pressure by modifying the action of heart. The great increase of the lymph flow occurs, however, when the pepton solution goes directly into the aorta reaching the heart only in great dilution, and then causing neither marked change of arterial pressure nor venous stasis. This lymph is also due to the cell action in the walls of capillaries just as in the case of the other substances. Similar results were produced by extracts of some tissues of vertebrates; for example, the wall of the intes-

tine of a dog killed during active digestion, while the experiment was less successful when the animal had fasted for forty-eight hours. Moderate effects were obtained with extracts of dog liver and ox pancreas, slight with lymph glands of the dog, and none with muscles of the pike and rabbits, or with the spleen or dry blood of dogs. In some instances a dilute solution of the white of egg had a very marked lymphagogic action, but the active substance is not present in every egg.

There is a second class of lymphagogues which increases the lymph flow by taking substances from the other tissues and not from the blood. To this group belong sugar, urea and salts when sent into the blood in considerable quantities. Such substances leave the blood rapidly (as others had shown) and the blood gains water. But the introduction of sugar (grape sugar) or sodium chloride also enormously increases the amount of lymph and at the same time the flow of urine from the kidney. Since the amount of water in the blood, in the lymph, and in the urine becomes greater it follows that this "sugar lymph" can have no other source than the water of the tissues—it is tissue lymph and not blood lymph. The amount of salt necessary to produce such a result is much smaller than that of the sugar. The lymph stream will grow to five or six times its original amount by the introduction of 0.6–0.8 gm. NaCl for each kilogramme of body weight while 3.0–5.0 gm. of grape sugar per kilogramme would be needed. Heidenhain made a few comparative experiments and found that the lymph flow varies according to the power of the various salts used to draw water from the tissues.

The difference in the action of these two groups of lymphagogues is made clear by the fact, that, when the aorta has been nearly closed for a couple of hours and the introduction of the various extracts already mentioned causes no increase of lymph flow, it increases at once upon the introduction of sugar or salt. The "sugar lymph" is, then, not directly dependent upon the activity of the cells of the capillaries, or, rather, not so directly as that produced by the other lymphagogues. The passage of the sugar into the lymph cannot be explained by any simple diffusion, for it goes on at a time when the lymph contains much more than the blood. The cell wall of the capillaries must be thought as transferring the sugar to the lymph spaces where the attraction for the water manifests itself, and thus the lymph flow increases. Probably the behavior of the salts is the same, but this is not so easily determined.

The way in which the water of the blood is increased is also not clear, nor is it easy to form a distinct idea of the way in which the kidney secretion is influenced. Perhaps the substances under consideration are secreted in a concentrated form in the cortex and take up more water from lymph channels and blood capillaries while passing down through the loops and other parts of the tubules. It must be distinctly borne in mind that the lymphagogues of the first class do not act upon the kidney.

The great significance of these results, incomplete as the experiments are, is evident upon the briefest reflection. The action of many saline waters is perhaps due to some such movement of the lymph, which may be thought to purge and purify the tissues without the ordinary purging action of the salts being an important feature at all. Possibly other drugs (with an

"absorptive" or "derivative" action) may be supposed to work in some similar way. May it not be that the damage done by diabetes mellitus is explainable in this way, the presence of much sugar in the blood causing the formation of abnormally much lymph (tissue lymph) to the detriment and weakening of the tissues? The hope, too, is awakened that other "lymphagogues" may be found whose action can be applied to benefit the tissues by causing them to obtain a richer lymph and in larger quantities than they have been receiving and thus improving their nutrition. The entire subject is tremendously suggestive.

THE QUESTION OF NERVE FATIGUE.

Some years ago it was shown, but rather inconclusively, by Bernstein, that tetanic stimulation of a motor nerve in frogs caused no fatigue since the muscles would still twitch when the current which had been interposed to block the stimulation was removed. An improved demonstration of this fact was made several years later by Wedenski. It was then shown by Bowditch⁸ that the use of curare made it possible to demonstrate that the behavior of the nerves in warm-blooded animals (cats) is the same. The motor nerves do not fatig. The same author⁴ afterwards published a still more complete demonstration by experiments upon dogs. A motor nerve may be tetanized for hours and yet as the curare used to check movement and fatigue of the muscles loses its effect, that is, is eliminated, the muscle fibres are again led to contract, the stimulation still passing down the nerve apparently in undiminished vigor.

It is, of course, important to inquire whether a similar immunity to fatigue exists in other nerves. For the sensory nerves (Langendorff) it is rendered very probable by the persistence of pain, as in toothache, which may be as great upon awaking as when we went to sleep, but a different form of demonstration is very desirable. Szana⁶ has made some experiments which show that the inhibitory fibres of the vagus (at least in the rabbit) are not fatigued by long-continued stimulation. By using atropine the inhibition of the heart-beat could be prevented, although the vagus was tetanized for hours; but as the atropin effect wore off (elimination), the inhibitory action of the nerve became apparent and gradually regained its full power.

RECENT WORK WITH ALCOHOL.

In reviewing the evidence concerning the physiological action of alcohol one is much impressed by the very unsatisfactory character of the experiments made to determine the effect upon the nitrogenous metabolism. Chittenden⁸ has recently reported a small series of observations made with great care upon dogs, and which may be greeted as a most acceptable addition to our knowledge of the subject. The animals were fed upon a diet of dried meat and milk crackers, whose nitrogen could be exactly determined, and they appear to have been in nitrogenous equilibrium. In each of the three experiments there was a period of some days without alcohol at the beginning and again at the end, the middle series of eight to ten days forming an

⁸ Bowditch: Note on the nature of nerve force. *Journal of Physiology*, vi, 133.
Bowditch: Über den Nachweis der Unermüdbarkeit der Säugethiernerven. *Arch. f. Physiol.*, 1890, 565.

⁶ Szana: Beitrag zur Lehre von der Unermüdbarkeit der Nerven. *Arch. f. Physiol.*, 1891, 315.

⁸ R. H. Chittenden (with Norris & Smith): The influence of alcohol on protein metabolism. *Journal of Physiology*, xii, 220.

alcohol period during which the dog received average amounts of 1.9–2.7 c.c.m. of absolute alcohol for each kilogramme of body weight.

Such experiments would be expected to give very definite results if alcohol have a very pronounced influence on the metabolism. They show that "no very striking specific action upon the general metabolism of protein matter" is caused by such amounts given to dogs. Chittenden thinks that the alcohol must be considered as acting as a non-nitrogenous food, and that the nitrogen of the body may be protected and the nitrogenous output somewhat lessened. Two of his series do show such a diminution of the nitrogen in the excreta during the alcohol period. In both of these cases the day which followed the cutting off of the alcohol-supply showed a great increase in the nitrogen output, as though, Chittenden thinks, some check had been removed from the metabolism of the proteins. A vigorous enemy of alcohol would probably argue that "effete material" had been retained, but he would find it hard to explain why so little effect is produced if alcohol be as harmful as is usually maintained. One very suggestive point is brought out in these experiments by the observation that the excretion of uric acid is much increased (in one series it was doubled) by the action of the alcohol. Whether this be due to freer excretion or to increased production is not clear, but the point seems worthy of further examination, and may throw light upon the relation of alcohol to the "uric acid diathesis." In these experiments no distinct diuretic action was observed.

Another contribution to our knowledge of the physiological action of alcohol has been made by Strassmann.⁷ He fed young dogs of the same litter liberally and regularly, giving some of them measured quantities of pure or impure spirits. These experiments lasted about seven weeks, when the animals were killed and weighed. As the animals were young (only about two months old), the number rather too small for comparison, and the quantities of alcohol decidedly large, it does not seem prudent to make many inferences from the figures reported. The percentage weight was distinctly greater in the alcohol dogs for liver and kidneys (muscles and bones not noted), but especially for the fat which was more than doubled. This line of work deserves to be followed up with great care.

In other experiments, upon man, Strassmann endeavored to determine more accurately the elimination of alcohol by the lungs, not feeling quite satisfied with the method employed by Bodländer who had found that the lungs carried off about 1.6% of the alcohol in dogs while man loses 1.2% in this way. The respiration apparatus of Zuntz was used, with the modification that a flask was attached, the air of which was considered to be a fair sample after the expired air had passed through the apparatus for half an hour, and the amount noted. The alcohol vapor in the flask (containing some 1750 c.c.m.) was estimated by the chromic-acid method, and the amount calculated for the hour. In this way six experiments were made on three persons, as against Bodländer's three experiments on himself, but with quantities which may be considered to be fairly comparable with those employed by Bodländer. The average amount excreted by the lungs during four hours, after which time the excretion lungs during four hours, after which time the excretion

⁷ Strassmann: Untersuchungen über den Nahrwerte und die Ausscheidung des Alcohol. *Phüger's Archiv*, xix, 1891, 315.

is insignificant, was 5.1% of the quantity of alcohol taken—decidedly more than the 2.0% regained by Bodländer in his expired air. The examination of the urine made by Strassmann in five experiments on two persons determined an average output of 1.7% of the alcohol through the kidney in man, Bodländer's figures being 1.2%; but as the average in one of Strassmann's men is 1.35%, renal peculiarities may be in play. Strassmann agrees with Bodländer that there can be no doubt that by far the greater part of the alcohol is disposed of in the body and not excreted as alcohol; but he thinks that his determination of the amount lost by the lungs and kidneys is more exact, and justifies the conclusion that as much as 10% may be lost leaving 90% to be made use of in the body presumably as a "force producer."

It is perhaps worth while to call attention to one point in this investigation, while admitting that the method is in principle an improvement upon that of Bodländer. Strassmann seems to have made but one control experiment to test his method and he then recovered only 89% of the alcohol which had evaporated from his mixture. Since the method itself multiplies any error in the determination by about 250, and since the determination depends upon color comparisons, it is hard to say how much exactness may be credited to the observations. It may also be fairly urged that the respiratory movements, while not affecting the oxygen and carbon dioxide whose proportions are dependent upon the tissue respiration, are sufficiently altered to render the excretion of the alcohol by the lungs greater than it would be normally. Some of the irregularities in Strassmann's tables strongly suggest this and one experiment with forced respiratory movements, by which the exhalation of the alcohol seems to have been markedly increased, although not conclusive, points in the same direction.

In another series of experiments made in the same laboratory¹ the influence of alcohol upon the digestion was incidentally examined. It was found that 60 gm. of alcohol had no deleterious influence upon the digestive powers of a man accustomed to take that quantity, as compared with the digestion of a similar diet in another man using no alcohol.

(To be continued.)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

REGULAR Meeting Monday, December 7, 1891,
DR. CHAS. B. PORTER in the chair.

DR. W. F. WHITNEY read a paper on

FAT EMBOLISM.²

DR. A. T. CABOT: I remember very well the first case that brought the subject of embolism to my mind. The case was that of a man with fractured thigh. Very severe dyspnoea came on, and he died on the third or fourth day. I, myself, made the sections of the lungs, and found them very generally filled with fat,

¹ See page 139 of the Journal.

² Zuntz and Magnus-Levy: Beiträge zur Kenntniss der Verdauungskrankheit und des Nährwertes des Brodes. Pflüger's Archiv, xlii, 438.

that is, the capillaries. It was a fat leg I remember, and it seemed at that time as if the symptoms were largely of the respiratory system, and were, we thought, adequately accounted for by the amount of fat found in the capillaries of the lungs.

In regard to the case Dr. Richardson speaks of, at the time I saw it my reason for not advising operation was that I did not think the man would survive the operation. I should like to ask Dr. Richardson if he has figured out any lesions that he would be likely to find.

DR. M. H. RICHARDSON: I must have expressed myself badly, for I meant to say the diagnosis was extremely obscure, and that it was very doubtful whether operative interference would do any good whatever, though it seemed possible that some removable cause might be found. The first twelve hours the symptoms did not seem serious enough to justify operation, and during the next twelve the patient suddenly became so much worse that operation was out of the question.

DR. CABOT: It seems to me, in cases where the lesion is occasioned by a fall which sets up a peritonitis, you almost always have some symptoms of that lesion earlier in the history of the case, immediately after the case comes under observation you have some symptoms of pain and local tenderness. It seems to me with those symptoms an immediate laparotomy might be advisable. I have not many data to go upon, but I should hardly think with the absence of those symptoms a laparotomy was likely to show a lesion that could be remedied.

DR. CHARLES P. PUTNAM: I should like to ask if Dr. Whitney gave any theory as to the cause of the condition of the contents of the stomach and upper part of the intestine in the case of the man.

DR. W. F. WHITNEY: The stomach presented a few small haemorrhagic erosions, such as are apt to occur in cases of severe and prolonged vomiting, and apparently there had been no peristaltic movement to move the dark-colored contents of the intestine along. It is possible that both of these cases of intestinal disturbance may have been, as I suggested, of central origin and due to fat embolism of the brain. Certainly, in the case of the man, there were no appearances of peritonitis found at the autopsy. There was a distension of the intestines from the stomach to the rectum, but beyond that there was absolutely nothing beyond slight injection of the surface not inflammatory in character nor accompanied by any exudation. The similarity in the symptoms of these two cases is very marked, and the fall in temperature in both was very striking. This was one of the most constant symptoms noticed in cases of fat embolism, and as in both of these it occurred at the time when most of the recorded cases die, it is fair to suppose that it may have been due to such embolism.

As regards what Dr. Cabot said, of course there is always the objection that we cannot with absolute certainty take the results of experiments on animals and transfer them without any further consideration to man. In animals we find that a very large amount of the pulmonary circulation must be shut off before rise in arterial tension is found, but I do not think we can say a less quantity may not produce very grave symptoms in man.

I would like to ask Dr. Richardson or Dr. Cabot if it is customary to see as much rise of temperature after ordinary cases of simple fracture as found in these.

DR. CABOT: Fracture of what bone is particularly liable to be followed by this?

DR. WHITNEY: I think it depends a good deal on the laceration of the tissues besides that of the bone-marrow itself. Fat embolism has been found after almost every fracture that has been known. In one case I found it in the kidneys three-quarters of an hour after a case of simple fracture of the skull. It has been found in a number of cases of puerperal eclampsia, but the origin of the fat was very doubtful. In cases of rupture of the liver and absorption of fat from the peritoneal cavity, emboli have been found. In insane people who have thrown themselves against the side of the room and received severe contusion, embolism has resulted. In these cases there is a comminution of the subcutaneous fat tissue from which absorption can take place as well as from the bone marrow. It has been noticed after the removal of fat tumors and resection of the knee-joint.

It seems to me that really the cases in which death can be attributed solely to the fat are very few, and that it is usually complicated by a septic process.

DR. H. F. VICKERY: May I ask whether fat cannot go through ordinary capillaries perfectly well, whether that is not one argument that it must be in the brain's terminal arteries alone that fat can do harm?

DR. WHITNEY: I think it must go through the ordinary capillaries, but why it should remain stored up for a week and then appear again is a very curious point.

DR. RICHARDSON: We are much indebted to Dr. Whitney for his valuable communication upon this important subject, for it shows us that we are liable to make grave mistakes in the treatment of fractures of long bones if we do not bear in mind the possibility of fat embolism, and may subject patients to unnecessary risk and suffering by useless operative interference.

In reply to Dr. Cabot I would say that in both my cases we had just that combination of symptoms which, in the absence of traumatism at least, demands immediate exploration of the abdomen. This was especially true of the first case reported. The symptoms seemed to indicate either an acute obstruction or a general peritonitis, or both. I do not think anybody suspected in either case the presence of fat embolism.

The importance of this pathological condition and the symptoms by which it manifests itself have been strongly impressed upon me by Dr. Whitney's paper, and I hope to profit much by his recommendations.

DR. C. B. PORTER: I agree most cordially with what Dr. Richardson has said as to the debt we shall owe in the future to Dr. Whitney's paper to-night. I can recall but one case, as I run back in my mind over the fractures with sudden death, and that is of one in recent years. I do not remember the exact facts about it, but I think it was fracture of the leg. The autopsy proved it to be a case of fat embolism. I think there were no abdominal symptoms, but respiratory and cerebral symptoms.

DISCUSSION ON INTERNAL ANTISEPSIS.

DR. H. C. ERNST opened the discussion.²

DR. F. H. WILLIAMS: The subject seems to me of much importance, and I think that by careful treatment we can do something in the direction of intestinal antiseptics both from a dietetic standpoint and also by the administration of suitable remedies. It is obviously desirable that the remedies should not dissolve

in the stomach, and also it is important that they should not be poisonous. Calomel which has been much used is not very soluble. Salol is given by many practitioners, but it has some dangers; by its decomposition carbolic acid is formed, which may be absorbed by the system and, as a matter of fact, cases have been reported of death with symptoms of carbolic poisoning from the use of salol. I think it is necessary that a warning should be sounded against large doses of salol. Certainly salol ought not to be used except in small quantities, and perhaps there are even better drugs to use. I am inclined to think there are. Hydronaphthol seems to me one of the most promising at present, and I think it may be used successfully, so far as symptoms go, in rather small doses. A grain, I think, is a sufficient amount in most cases, to be given as often as once in four hours, and in many cases one-half a grain is a sufficient amount. It is better to give these remedies between meals, so that they may not interfere with digestion.

As regards what the patient shall eat, I think much care can be exercised to advantage. Last summer at the City Hospital I used what is known as evaporated milk, that is, milk prepared by putting fresh milk into a vacuum pan and concentrating it so that it is four times as strong as ordinary milk. It can then be transported and kept fresh a considerable time, a week or ten days. When that kind of milk is diluted at the bedside it seems to me the patient is likely to get something which may be serviceable. Certainly this last summer the typhoid fever cases did seem to me to do better, so far as abdominal symptoms are concerned with treatment on evaporated milk, with small doses of hydronaphthol. I hope that in the near future we shall be able to do much towards intestinal antiseptics, and that we may have tests of the urine which will show us how well we have succeeded in our efforts.

DR. J. A. JEFFRIES said he was very glad to learn that efforts were being made in the City Hospital to provide typhoid patients with relatively sterilized food. Some years ago when studying the summer diarrhoea of infancy he had tried to impress upon the profession the importance of this measure, not only for children but also for adults.

Turning to the subject of intestinal antiseptics, that is, the killing of bacteria in the intestines, he did not think that any of the drugs now known were successful. The highly complex mammalian organism is more susceptible to poisons than the bacteria, and at the present time we could not poison the latter without injury to the former. The satisfactory course of a disease under the administration of an "intestinal antiseptic" did not show that the bacteria were in any way affected. This could only be demonstrated by examination of the bacteria in the stools, and such examinations did not give satisfactory results. When diarrhoea had been set up and the volume of the dejecta was increased, there was a relative diminution of the bacteria at times, and but little more. This was a mechanical action equal to the washing of a wound, and to be more safely accomplished, where indicated, by a cathartic. Any one who had experimented upon animals and had seen the results at times induced by non-fatal and inactive doses — so far as bacteria are concerned — would be slow to take them himself.

Some of the gentlemen have referred to the want of some other measure of the patrefactive changes going on in the intestine. We have had such for years.

² See page 157 of the Journal.

Certain of the products of bacterial growth — sulphuric ethers and aromatic compounds — are absorbed by the intestines and eliminated by the kidneys, as pointed out by Marox, Baumann and others.

Calomel, iodoform and a few other drugs of more or less use seem to act on the intestines not by killing the germs but by combining with the poisons and rendering them inert, the same as tannic acid and some of the alkaloids. A consideration of the bacteria in the liver and spleen in typhoid, phagocytosis immunity and the like are far from the question under discussion — intestinal antisepsis.

DR. H. F. VICKERY: An attempt at internal antisepsis is one that we ought to make, and I believe that some generation of physicians will succeed. There is one difficulty about it that has not been dwelt on. To realize internal antisepsis you have got to follow these micro-organisms around. They are not merely in the intestine. For instance, the bacillus of typhoid fever is found in the spleen also, and I do not think it is proved that all the harm that the typhoid bacillus does is transacted in the intestine. The preparing of the individual to carry on his natural fight against the disease-causing organisms is a rational measure, as has been mentioned, the giving him all the strength we can; and it also is a rational measure to keep the contents of the bowel moving on, within proper limits, as has been suggested by the last speaker. But it does seem to me at this present stage that asepsis bears the same relation to antisepsis internally as asepsis in performing a laparotomy does to an endeavor to cure a person with general septic peritonitis. We must try to have the air breathed, the food and drink swallowed, harmless. That is the most important service we can possibly accomplish. It is by what is called public medicine, hygiene, we can do the most good in this line.

DR. C. B. PORTER showed a

DERMOID CYST,

removed from a young woman twenty-six years of age. Her catamenia began at fifteen, and there was nothing remarkable in connection with them. She has had six children, and been married seven years. Five months ago she had twins. She has had pain in the back two years, and vaginal discharge three years. Only three months before the tumor was removed did she notice its presence. She was not able to lie on the left side since on account of pain. The tumor, as it presented itself through the abdomen, was considerably larger than a two-quart jar, and movable, and was very rapidly reached by the ordinary incision by laparotomy. Upon introduction of the trocar there was no excretion of the fluid at all, although it was evident it was a fluctuating tumor; and after ineffectual attempts and stripping the rubber-tube, it was found we could not get any fluid in that way, and upon withdrawing the trocar a fatty fluid flowed out and the tube was plugged by this mass of hair. I was finally obliged to turn the woman on the side, and allow the contents to flow out before I could introduce the hand and get the tumor out. The operation was done two weeks ago. The patient is now well.

Dr. Porter also showed

FOUR CALCULI REMOVED FROM THE BLADDER BY SUPRAPUBIC SECTION.

The patient was a man eighty years of age, and had

had difficulty in micturition for five years, and had been obliged to use the catheter the whole of that time. He had been troubled to a very considerable extent with haematuria, and his attending physician at one time in the passage of the catheter thought he felt a grating in the bladder. The operation was done November 21st, and upon exploration of the bladder, both previous to the operation and at the time of the operation, it was impossible to strike the stone. One could get with the sound a sensation of grating. I opened the bladder by the suprapubic section and removed the four stones. One is quite small. The urethra was surrounded entirely by an enlargement which made it simulate exactly quite a good-sized os uteri with quite hard and prominent mouth and lips, and these I seized with forceps and cut off with curved scissors. The tubes are out from the suprapubic wound and he is passing most of his urine through the catheter that is placed in the bladder, and a little oozes out still from the wound. He is doing remarkably well, and for a man eighty years of age to undergo such an operation is quite remarkable. I am passing the large sounds, 33 and 34 French, every third or fourth day into the bladder, in the hopes of so moulding what is left from the prostate, that if he recovers from his ventral wound he will be able to pass his water in the natural manner.

Recent Literature.

A Text-Book of Physiology. By M. FOSTER, M.A., M.D., F.R.S., Professor of Physiology in the University of Cambridge, and Fellow of Trinity College, Cambridge. Fourth American from the Fifth English Edition, thoroughly Revised, with Notes, Additions and 282 Illustrations. 8vo, pp. 1072. Philadelphia : Lea Bros. & Co. 1891.

At first glance the book may seem to be a faithful reprint of the last (fifth) English edition, but unfortunately this is true of only part of it. As far as, and including page 886, the volume before us seems to be a fairly accurate reprint of Parts I, II and III of the fifth English edition, containing but few typographical errors, and no important additions to the text. About seventy-eight figures have been inserted, but few of which are, however, strictly physiological in character most of them being illustrative of anatomical structure. The remainder of the book, that is, from page 887 to the index, including both, seems to be simply a reprint of the corresponding portion of the third American, and in no way represents Part IV of the fifth English edition to which, according to the title-page, it should correspond. This oversight — if such it be — is very unfortunate, inasmuch as it impairs greatly the value of the book, and as a reference book to the many students now possessing a copy, who may be unaware of the defect, renders it — this portion at least — worse than useless.

The fifth English edition of Part IV differs greatly from the fourth, though two of its chapters are practically the same as the corresponding chapters in the fourth edition.

The Appendix, by Mr. Lea, "On the Chemical Basis of the Animal Body," has not so far as we know appeared in a revised form since the publication of the

fourth English edition (1883), though it is forthcoming, and will form a companion volume to the last English edition. There is one typographical error to which it would seem proper to call attention. On page 54 the words "give out something" have been omitted after "taken place" (line 7). This omission renders the sentence to which the words belong quite unintelligible.

The name of the American editor does not appear.
J. C. C.

An Introduction to Human Physiology. By AUGUSTUS D. WALLER, M.D. Lecturer on Physiology at St. Mary's Hospital Medical School, London; Late External Examiner at the Victoria University. 8vo, pp. 612. London: Longmans, Green & Co. 1891.

The author's style is peculiarly clear and simple, and his language exact. Part I deals with "The Phenomena of Nutrition," under which heading are discussed the physiology of the blood, circulation, respiration, digestion, secretion, excretion, metabolism and animal heat. Part II deals with "The Phenomena of Excitation," under which heading the author includes the physiology of the neuro-muscular system and of the sense organs.

The Appendix contains a section summarizing the knowledge thus far accumulated relative to the physiology of the embryo, and a chapter giving the "Constitutional Formulae of some of the Chief Proximate Principles," which latter we hope will be of great use to the student in aiding him in his endeavor to form a "living mental picture of what the great organs below a man's skin are like, what they are doing, etc.," of which the author states in the preface physiology "should fundamentally consist."

A brief and quite well chosen Bibliography has been appended in the hope of affording the student a "few main starting points and indications."

At the head of each chapter is a syllabus of its contents, in which by means of a prefixed asterisk those sections which treat more especially of the details of the subject are indicated.

It is well calculated as a text-book for junior students of medicine for whom it seems to have been primarily intended, while it contains able discussions of some of the yet unsettled questions which will make it of value to more advanced students. The descriptions of methods and of apparatus are very clear and precise, facts are well stated and conclusions neatly drawn.

There is a place for it among English text-books of physiology which is at present filled by no other.

J. C. C.

Physical Diagnosis. A Guide to Methods of Clinical Investigation. By G. A. GIBSON, M.D., D.Sc., F.R.C.P., Ed., and WILLIAM RUSSELL, M.D., F.R.C.P., Ed. With one hundred and one illustrations. New York: D. Appleton & Co. 1891.

This is a small octavo of 367 pages. The authors are both teachers in the Edinburgh Medical School, and one of them is also connected with the Glasgow School. The book, as its title implies, is a hand-book for students, and is limited entirely to the consideration of physical examination.

It is a convenient and, our examination indicates, a reliable compend for the purposes for which it was prepared.

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TYPHUS FEVER IN NEW YORK.

THE most serious outbreak of typhus fever that has occurred in the country for many years, became known to the health authorities of New York late on the night of February 11th, and on the following day no less than fifty-eight cases of the disease were discovered. The history of the rise and spread of the typhus is as follows: On January 30th the French steamer *Massilia*, of the Fabre line, arrived with 717 steerage passengers. Two hundred and fifty of these were Russian Hebrew immigrants who were aided by funds provided by Baron Hirsch, and they were first transported from Odessa to Constantinople, whence they hoped to be able to go to Palestine and settle. Being disappointed in this, through the action of the Turkish authorities, they came to Marseilles, where they embarked on the *Massilia*, together with a considerable number of other immigrants of various nationalities. The steamer on January 1st, took on board more than 200 Italians, and on January 12th she sailed from Gibraltar. During the voyage to New York, according to the passengers' accounts when they landed, they were insufficiently fed, and four died in mid-ocean. On the ship's arrival eleven passengers were still ill, three of them with what was believed to be typhoid fever, but which, as the sequel shows, was undoubtedly typhus. They were all sent to the immigrant station on Ellis Island, the Russian refugees unfortunately being permitted to land on the understanding that the United Hebrew Charities, which have charge of the disposition of the Baron Hirsch fund in New York, should not permit them to become a burden in this country! They were for the most part in a pitiable state of destitution, and some \$400 was expended in providing clothing for them.

One of the houses to which they were sent was on 12th Street, near Third Avenue, and a number of its inmates were soon reported ill. A physician in the service of the United Hebrew Charities, was called to attend them on February 8th, and learning that there had been cases of typhoid fever on the *Massilia*, he made a diagnosis of that disease. On the evening of Febr-

ary 11th, he became so alarmed at the gravity of the outbreak, that he sent word to the Bureau of Contagious Diseases to remove some of the patients to the hospital. At 11 o'clock that night Dr. Roberts, an inspector of the Bureau, made a visit to the premises, and early the next morning Dr. Cyrus Edson, chief of the Bureau, went there to investigate, when to their astonishment, these officers found fifteen well-developed cases of typhus, and it was ascertained that the first case had occurred on February 2d. These fifteen cases, together with the mothers of four of the patients who were young children, were at once sent to the hospital on North Brothers' Island, and the most prompt and thorough measures of disinfection taken in the house.

A search was then made at the other tenement-houses where the Russian refugees had been lodged, and this resulted in the discovery of forty-three more cases of typhus, which were all sent to the hospital for contagious diseases. It was ascertained at the same time that about sixty of the Russians who came over on the *Massilia* had already been sent to situations in different parts of the country, so that they will be likely to take the disease with them.

On the day following, February 12th, eleven additional cases were discovered among the Russians. Every effort was made to trace the Italian and other immigrants who came on the *Massilia*, but it was found that many of them had left the city. A special meeting of the Board of Health was also held, and resolutions were adopted, taking suitable measures to prevent the dangers of infection from the immigrants from the steamer *Massilia*, and to provide hospital accommodation for the cases as soon as discovered. On February 13th, five additional cases of typhus were found among the Russians from the *Massilia*; February 15th, seven more cases; February 16th, six cases at Oakdale, Mass.; and each day is adding to the list. There are, at time of writing, eighty-nine cases at North Brothers' Island.

The whole country is more or less alarmed and disturbed, and really in a certain measure endangered by the living freight which this steamer has been allowed to land upon our shores after it had been refused the hospitality of the intelligent Turk.

We have thought it worth while to put together the main facts in the case as an illustration of the daily folly which we as a nation are permitting to be committed in the beautiful name of freedom, to the relief of other countries, the profit of a lot of steamship companies, the gradual degradation of our population, and the positive diminution in the safeguards for life, liberty and the pursuit of happiness which those already living here would like to be assured of. We open our doors to squalor and filth and misery — which mean typhus fever, and we admit leprosy almost as if these things were blessings in disguise.

The reports of the Treasury Department show that for the last six months of 1891, the number of immigrants coming from Russia (Poland excepted) in those

months was 46,710, as against 20,934 in the corresponding months of 1890. The whole number of immigrants was greater in 1891 than in 1890 by about 100,000, and nearly half of this increase is ascribed in the reports to Russia and Poland.

As sanitarians, with this text before our eyes, we desire to add our indignant protest to that expressed by the eminent statistician, Gen. Francis A. Walker, in a recent lecture against the results of our immigration laws. There are times when charity should begin at home.

SUICIDE IN THE EUROPEAN ARMIES.

THE percentage of suicides had become so great in the French army that the French Minister of War sent Dr. Longuet as a special delegate to the International Congress, held last summer in London, to communicate the results of his studies relative to suicides in the armies of Europe. Mr. F. P. Emery summarizes these results as follows:¹

The Austrian army leads, with yearly average of 122 suicides for every 100,000 men in the effective troops, for the years 1875 to 1887, inclusive. The maximum was observed in 1889, when it was 149 per 100,000; the minimum was in 1878, when it was 97. In this army suicide is appreciably increasing; death by suicide represents a fifth part of its entire mortality; there is no disease that is more prominent in the list of causes of death.

The German army ranks next to the Austrian in this connection. The ratio of suicides here during the years 1878 to 1888 was 67 per 100,000 annually. Here, also, suicide is on the increase.

In the Italian army, from 1874 to 1889, there were 40 suicides per annum per 100,000 troops. In contrast with what is above stated as to the increase in this army mortality in other countries, the army mortality in Italy due to suicide, has remained nearly stationary during a series of years.

In the French army (home service) there were in each year from 1872 to 1889, an annual average of 29 suicides per 100,000; in Algeria, the French soldiers killed themselves during the same period at the rate of 63 per 100,000.

In the Belgian army the suicide rate was 24 to every 100,000.

In the English army (home service), from 1882 to 1888, the rate was 23 per 100,000; in the Indian service (Bengal division) it was 48.

In the Russian army the rate from 1873 to 1889 was 20, with a maximum of 91 in 1882.

The Spanish army, at the foot of the list, but for a single year only (1886) gave a rate of 14 suicides per 100,000 men.

In the old armies, especially those recruited by enrolment, it was the older soldiers who generally committed suicide. This is still actually the case in the English army. In France, Italy, Germany and Austria, on

¹ Publications of American Statistical Association, Sept., 1891.

the other hand, it is to-day the young, rather than the old soldiers, who commit suicide. In Austria there is an excessive proportion of suicides of young soldiers, who kill themselves during the first month of their service. The under-officers present three times the proportion of suicides that are found among the troops; while the officers, who are older men of higher rank, furnish twice the number. It is among the engineers that the suicides are generally least frequent; among the cavalry and infantry the most. Condemned soldiers in the military prisons and penitentiary institutions rarely take their own life. On the contrary, there are frequent suicides in the corps prisons, among those soldiers who are accused and are awaiting trial.

Shooting is the most frequent method. It counts for more than one-half, and in the Austrian army for three-quarters, of the whole number. This proportion is four times as large as that offered by the civil population. Hanging and drowning are the two other modes that are most frequent. It is worth while to note that in the English army there is a great frequency of suicide by cutting the throat, a mode of self-murder unknown in the French army, but which occurs to a slight extent in the German.

It is in the infantry that the use of fire-arms is most common. Among the mounted soldiers hanging is much more frequent, and is often accomplished by means of the horse-brides. In the prisons, hanging is the almost exclusive mode.

Those who shoot themselves almost universally aim at their heads. The army in Algeria, however, forms an exception. With these soldiers it is almost always the body that is shot; usually the abdomen or the chest; sometimes the neck, the shoulder, an arm or a leg. May this not be due to the fact that among the Arabs an idea of infamy attaches to the mutilation of the head?

The seasons exercise their influence upon the manner of suicide; and in summer drowning is much more frequent.

In the Austrian army a third of the suicides are attributed to a distaste for military duty. This cause shows itself with much less frequency in the other armies. The fear of punishment is said to cause one in three in Austria and Germany, one in five in France, and one in seven in Italy. Suicide caused by some love trouble is much more frequent in France, where one-fifth of the whole number is attributed to this cause, and in Italy, where it is responsible for one-seventh, than in England, Germany and Austria. Mental disorders represent from one-fifth to one-twelfth of the whole number.

The increase in the frequency of suicide during the hot season is as marked in the army as among the civil population. The maximum suicidal mortality is reached during the hottest summer months, and the minimum during the coldest of the winter.

THE State Board of Health of Kentucky, have begun a vigorous prosecution of quacks and travelling doctors in Louisville.

HYGIENIC LEGISLATION.

OUR legislative committees have to listen sometimes to very funny petitions. The Committee on Public Health of the Massachusetts Legislature has recently been hearing arguments on the petition of the Woman's Christian Temperance Union, asking that all boys under sixteen years of age found smoking in public places be arrested, locked up, taken into court and fined. The petitioners complained that the present law prohibiting the sale of tobacco to minors was not enforced; but they seemed to think that by arresting boys *flagrante delicto*, the youth of the State would be frightened into abstinence. This, surely, shows a great lack of knowledge of the character of the small boy. If by such a simple expedient as smoking a cigarette he could make his natural enemy, the policeman, take an active part in a game of hare and hounds, the supply of cigarettes would soon fall far short of the demand.

One of the more enthusiastic of the petitioners informed the committee that tobacco is a deadly poison, and related several cases within her experience in which cigarettes had ruined boys of her acquaintance. If her boy smoked, she would rather have him arrested than not, and she should prefer that he be kept in jail until he was seventy years of age rather than have him become a confirmed smoker.

We do not wish to imply that it is not very desirable to prevent minors from smoking, if possible, but there are several similar bad habits which are freely indulged in, and which do much more harm than juvenile smoking. We respectfully suggest that if this bill is to be acted on, there be included in it a section making it a misdemeanor to feed a child of less than three years of age on seed-cakes, pickles, candy or tea. If this provision were carried out many, possibly valuable, lives would be saved to the community every year. Also, as there is no reason why hygienic legislation should be limited by age, much more suffering than is caused by cigarette smoking, both to the victims and their friends, would be saved by arresting all women who drink more than a pint of tea in the twenty-four hours.

Several similar amendments to the bill suggest themselves, but some of them would be difficult to enforce, and it is of great importance to the public that the duties of the policeman should not be made greater than is consistent with the limitations of time and strength.

MEDICAL NOTES.

PAN-AMERICAN MEDICAL CONGRESS IN NEW YORK STATE.—At a meeting of the Medical Society of the State of New York at Albany, February 5th, a committee was appointed to co-operate in promoting the interests of the Pan-American Medical Congress. The committee consisted of Drs. A. Walter Suiter, A. Van der Veer, James D. Spencer, Seneca D. Powell, W. W. Potter, D. B. St. John Roosa, and John O. Roe.

RUSH MEDICAL COLLEGE. — A Concours will be held at Rush Medical College, Chicago, beginning Tuesday evening, March 1st, for the purpose of filling the position of Lecturer on Anatomy, and on Materia Medica and Therapeutics in the spring Faculty. The spring course begins March 31st, directly after the close of the regular term, and continues two months with a class of from 250 to 300 students.

THE KHEDIVE'S DEATH. — The *British Medical Journal* has received a series of documents bearing upon the last illness of the late khedive of Egypt. To publish them, it says, or even an analysis of them, would renew the most painful impressions. It is impossible, in the light of all the facts, not to arrive at the conclusion that Tewfik's death was hastened by the untimely administration of morphine. "The whole story is an illustration of the lamentable influence of the harem in bringing about the selection of native physicians, and their control of access to the patient, skill and experience of European physicians being thereby set at naught."

NEW MEDICAL PERIODICALS. — The *Revue Générale de Médecine de Chirurgie et d'Obstétrique*, a weekly journal devoted entirely to short reviews of recent medical papers, appeared for the first time in January. It is published in Paris under the editorial charge of Dr. F. de Rause. The *Hot Springs Medical Journal* has been established in Hot Springs, Arkansas, to appear on the fifteenth of each month. In addition to other subjects, the therapeutic value of the springs will be discussed.

THE LEGAL STATUS OF THE CORSET. — In a recent opinion Judge Wheeler, in the United States Circuit Court, sustains the decision of the Board of Appraisers and of the Collector that a corset is an article of wearing apparel. The decision is as follows: "In this case the question is whether the article known as cotton corsets is properly classified as wearing apparel. In point of fact, it is a waist in which are inserted whalebones or steel for support of the body and clothing. If you were to ask anybody who did not care anything about the matter in any way, but who knew, whether that was an article of wearing apparel or not, or whether a mechanical contrivance, I rather think he would say it was a piece of clothing, that it would help to keep the body warm, and answered the purpose of a waist. I think it is clothing. However, I am not so very confident of it. The finding may be confirmed."

THE BREAD OF THE FAMINE DISTRICTS IN RUSSIA. — The *Lancet* has obtained possession of a specimen of the relief bread furnished by the Russian Government to the starving peasants in the Province of Nizhni-Novgorod, and has had it analyzed. The result shows the addition, in round figures, of not less, and probably more, than ten pounds of foreign substance to every hundred weight of rye flour, including woody fibre and husks, leafy matter and seeds, and containing silica and sand to the extent of more than two per cent. This makes the flour heavier and also increases its bulk. The bread is described as of a dirty

brown color, looking like coarse peat. Many persons to whom it was shown failed to recognize that it was bread at all. A Russian, writing from Nizhni-Novgorod, says: "I found in many cases that this so-called bread contained no rye flour whatever, but was composed of wild arrack, potatoes, chaff and leaves." The daily allowance of this so-called bread judged sufficient to keep the life in a healthy adult is something less than one pound.

BOSTON.

CLOSING OF TENEMENTS. — The City Board of Health have recently ordered vacated a number of tenement-houses, for sanitary reasons.

DEATH-RATE FOR THE WEEK. — There were 194 deaths in Boston last week, making the death-rate 22.1. Of these, nine were due to influenza, three being uncomplicated. The deaths from consumption were 16, pneumonia 27, bronchitis 19. The number of persons over sixty years of age was 46.

MORTALITY OF BOSTON IN JANUARY. — The death-rate of Boston during January was much larger than usual. This was undoubtedly due to the epidemic of influenza — more than appears in the returns. There were 1,190 deaths, as against 894 in 1891, making the death-rate 31.10. Of the deaths last month, 567 were males; 386 were married, 1,160 were white, 285 were under five years of age, 689 were natives of the United States, and 298 were of American parentage. Influenza was reported as the cause of 63 of the deaths; consumption, 150; scarlet fever, 29; diphtheria, 28; bronchitis, 109; heart disease, 84; pneumonia, 240. Scarlet fever was unusually prevalent; there were 290 cases reported against 109 during the corresponding month of 1891.

THE HOME OF THE GOOD SAMARITAN. — The annual report of this institution shows that during the past year 249 patients were treated at the institution, of which 59 were children. The hospital has been much benefited by an entire change in the system of drainage.

THE CHILDREN'S HOSPITAL. — During the year 1891, 603 patients were treated in the hospital, and 1,790 new cases in the out-patient department. The systematic training of nurses has been established, the course to cover two years. The Convalescent Home of the Children's Hospital, a corporation formerly known as the Ladies' Aid Association of the Children's Hospital, reports that thirty-three acres of land were given by Mr. H. H. Hunnewell at Wellesley Hills, and the building is well advanced. The building contains two wards, each holding twenty-three beds, a large play-room, covered piazzas, and other rooms necessary for a well-equipped convalescent home. The managers intend to keep the home open in winter as well as summer, as soon as the resources will allow.

NEW YORK.

A NEW SITE FOR ST. LUKE'S HOSPITAL. — The authorities of St. Luke's Hospital have purchased a

new site for that institution. About \$500,000 was paid for the land, which is 583 by 200 feet, and is situated between Morningside Park and Tenth Avenue, and extends from 113th to 114th Streets. It is quite near the sites selected for the Cathedral of St. John the Divine and the new Columbia College buildings, and the ground has an elevation of 120 feet above tide-water. It is the present design to erect only a section of the building at first. The cost of this will be about \$750,000, and it will be harmonious in design with those of the Cathedral and Columbia College. One special idea of the new enterprise is to have separate buildings for patients with certain diseases, and it is probable that one devoted to those suffering from phthisis will be erected as soon as the necessary funds can be secured.

A NEW HOSPITAL FOR CHILDREN.—The trustees of St. John's Guild have determined to establish a small hospital for children in West 61st Street, and if this movement is successful, and the necessary funds are forthcoming, they propose to open other branch hospitals of a similar character in the most densely populated portions of the city.

PHILADELPHIA.

RESIGNATION WITHDRAWN.—Prof. Wm. Goodell tendered his resignation of the Chair of Gynecology in the Medical Department of the University of Pennsylvania, February 11th, but at the request of the Trustees, has consented to withhold it, provided his duties are lessened, as the demands of his large private practice forbid his devoting so much time as he has been giving hitherto to college and hospital work.

PROFESSOR WOOD'S TESTIMONY IN THE HARRIS CASE.—Prof. Horatio C. Wood made a personal statement at the last meeting of the College of Physicians, which calls attention to a remarkable and too prevalent abuse of privilege. In a recent trial in a New York City Court (the Harris Case), Professor Wood was called upon to testify as an expert on opium-poisoning. When he read the report of his testimony in the New York papers the next morning, he found statements attributed to him which to his mind could only be explained on the theory that he was mentally irresponsible at the time of making them. He was very much concerned about the matter, and immediately returned to New York to see if it was too late to have the testimony re-opened, so as to make his testimony read as he had intended to make it. Upon reaching the office of counsel he asked to see the official stenographic report, in which he found his replies, to hypothetical and scientific questions, perfectly correctly recorded. He arrived at the conclusion that the reporter, who had written the account of the trial, was not present in court when his testimony was given, and wrote a fictitious and misleading statement. What Dr. Wood did state is as follows:

"The positive diagnosis of opium-poisoning from the symptoms alone, is often impossible. In the Har-

ris case, the symptoms as embodied in the hypothetical question were so loosely observed that many symptoms essential to the diagnosis are omitted, and to this is added the fact that the early development of complete coma as recorded, is conformable to natural diseases, and is extremely rare, if it ever be present, in opium-poisoning. It seems to me that the cause of death, so far as the medical testimony is concerned, is enshrouded in an impenetrable mystery."

THE NEW LABORATORY OF HYGIENE OF THE UNIVERSITY OF PENNSYLVANIA is to be opened on February 22d, with appropriate ceremonies, and a large number of guests have been invited to inspect the new building and its complete equipment. It is very clear that the course is to be eminently practical. Every part of the building is a hygienic object-lesson; all the most approved methods of heating, lighting, draining and ventilating are to be tested by actual use. One room has six varieties of steam radiators, arranged so that the efficiency of each, and others, if necessary, can be known by accurate measurement. Another room exhibits three systems of ventilation. All sorts of traps and water-closets will be tested in the building. All pipes for drainage, hot and cold water, steam and gas, have everywhere been left bare; each system has its own color, so that it may be readily traced. In many of the laboratory fittings, there are new features especially adapted to the novel work to be done. The construction has been continually under the supervision of Dr. John S. Billings, who will be the Director of the School, and it appears certain that nothing which could add to the efficiency of the course has been omitted. Besides the course in Practical Hygiene, there will be an elementary course in Bacteriology, commencing at once, and an advanced course commencing April 2d, each lasting eight weeks. These courses are intended to be practical and will include investigations of water, air and soil, the study of pathogenic bacteria, microscopic technique, culture media, protective inoculation, and the preparation of vaccine, also details of disinfection, antisepsis, etc. Dr. A. C. Abbott, recently Assistant in Bacteriology and Hygiene in the Johns Hopkins Hospital in Baltimore, has been appointed First Assistant in the Laboratory of Hygiene, and applications for information or admission should be addressed to him at the University of Pennsylvania. This is the department which was founded through the liberality of Mr. Henry C. Lea and others. It is a valuable acquisition to the University.

THE PENNSYLVANIA HOSPITAL.—The Board of Managers of the Pennsylvania Hospital has approved plans for constructing a new wing, which will increase the capacity of the institution by one hundred beds, and will involve the expenditure of some three hundred thousand dollars. It is also contemplated to build a three-story Nurses' Home on the grounds, at a cost of forty thousand dollars, and plans for a new out-patient department are being prepared. Although this is probably the oldest general hospital in this country,

and its managers almost without exception members of the Society of Friends, who are celebrated for conservative methods, this hospital is in excellent sanitary condition; has many modern appliances, and is unsurpassed in its results; in fact, it is fully abreast of modern practice in both medicine and surgery. Clinical instruction to medical students has always been a feature of this institution, lectures being delivered on Wednesday and Saturday mornings. It also owns one of the largest medical libraries in the country, which can be used by physicians or students by the payment of a nominal fee each year.

NEW HOSPITALS.—A new hospital was opened on North Broad Street on February 1st, known as the Samaritan Hospital, which is a small general hospital under the special care of the Baptist denomination. The Rush Hospital for Consumptives on Pine Street corner of 22d Street, was recently opened, with a view to the special treatment of this unfortunate class, for whom also a cottage hospital at Germantown, in the suburbs of the city, has been in operation for some years.

A SYMPOSIUM ON INFLUENZA was recently held at the College of Physicians by the Philadelphia County Medical Society. Papers were read by Drs. F. P. Henry, H. A. Hare, L. F. Flick, Roland G. Curtin and Charles K. Mills.

A UNIQUE OPERATION.—Prof. Wm. H. Keen, on the 4th inst., performed an amputation at the hip-joint upon a lady who was suffering with rapidly-growing sarcoma of the thigh, and who had been sent from Brazil to see what could be done for her relief. What makes the case probably unique in surgical annals, is the fact that she was in the fifth month of pregnancy at the time of operation. The arteries were controlled by Wyeth's method, and scarcely any loss of blood occurred. Last accounts showed entire absence of fever, and patient doing well. A detailed report of this case will be published soon.

THE SEVENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH AND VITAL STATISTICS has just been issued by the Secretary, Benjamin Lee. The prospect of obtaining statutory enactments from the present Legislature in order to place the work of the Board upon a firmer basis, confirm its powers, and increase its usefulness by increasing its pecuniary means, appears to be better than ever before. This is largely due to the fact that the Board did such good work at Johnstown, after the flood in 1889, that Governor Beaver in his Annual Message to the Legislature, January 5, 1891, strongly commended the work of the Board, and urged the Legislature to make increased appropriation. He directed particular attention to the pollution of streams and water-courses, and the problem of the disposal of sewage of densely settled communities. The Board has appointed a Committee to consider the expediency of memorializing Congress on behalf of a National Law to prevent the pollution of streams passing from one State to an-

other, and this subject will probably be discussed at the National Conference of State Boards of Health, which meets next summer in Detroit.

Miscellany.

LOCAL ANÆSTHESIA.

HR. C. SCLEICH, at a recent meeting of the Berlin Medical Society, discussed the subject of local anesthesia by subcutaneous injections. He recommends that the skin be sprayed with ether before the puncture. Cocaine should be used in weak solutions only; he has performed five laparotomies with a .2 per cent. solution. The strictest antisepsis is necessary. Even solutions of two parts in 10,000 make the skin insensible in the region of the puncture; even water injected into the skin produces anesthesia. That water acts because it is a chemically foreign body is shown from the fact that a physiological neutral fluid fails to produce similar results. Other solutions which are capable of producing anesthesia are solutions of sugar, one per cent. solution of methyl violet, one-tenth per cent. solution of morphia, two per cent. solution of bromide of potassium, and two per cent. solution of caffeine.

These latter two solutions he recommends in cases where as much cocaine has already been injected as is deemed safe. In the discussion on this paper Gluck said that he considered that in some cases of similar local anesthesia the patient was in a condition of hypnosis.

THERAPEUTIC NOTES.

THE SALTS OF STRONTIUM.—A great deal has recently been written in the French journals on the therapeutic value of strontium. Germain Sée¹ has, noticing that in cases of Bright's disease, digestive troubles were often very much benefited, tried the effect of bromide of strontium in different forms of gastric troubles in doses of from half a drachm to a drachm a day. Different forms of dyspepsia were much benefited by its use. He suggests that the iodide of strontium may with advantage be substituted for the iodide of potassium in cases of heart disease.

Dujardin-Beaumetz² has employed the lactate of strontium with very good results in cases of Bright's disease. He attributes this favorable action to the effect of the salts on the digestion.

CREASOTE IN PHTHISIS.—Somnerbrodt³ again advises the use of creasote in pulmonary consumption. Five years ago, he published his results with it in a number of cases in which the maximum daily dose was less than eight drops. He is now convinced that it may be given in much larger doses. He reports several cases in which he has obtained very good results by a daily dosage of from a quarter to one drachm. He advises that it be prescribed in gelatine capsules, each containing one and one-half drops in combination with cod liver oil. At the commencement of treatment it may be sometimes necessary for a time to suspend its administration on account of gastric disturbance.

¹ *Sém. Méd.*, October 28th.

² *Sém. Méd.*, November 4th.

³ *Berliner Klin. Woeh.*, No. 13, 1891.

Correspondence.

THE MURAL PAINTINGS AT THE PARIS SCHOOL OF MEDICINE.

MANCHESTER BY THE SEA, MASS.,
February 12, 1892.

MR. EDITOR:—Those who have attended lectures at the School of Medicine, Paris, will remember the beautiful mural paintings, to the right and left of the rostrum in the amphitheatre. The mottoes were: "Ils étanchent le sang consacré à la défense de la patrie," "La bienfaisance du souverain hate leur progrès et récompense leur zèle," "Ils tiennent des dieux les principes qu'ils nous ont transmis." I write to ask if any of your readers know where I can obtain copies of these paintings, which are now in the past, as the amphitheatre was destroyed by fire two years ago.

Very truly yours,

W. T. PARKER, M.D.

A SURE CURE FOR EPILEPSY.

We have received the following letter from Michigan:

—, MICH., February 7, 1892.

BOSTON MEDICAL AND SURGICAL JOURNAL.

Gentleman, Dear Sir:—Will please publish few lines in your journal, and oblige that I have made a discovery and positive cure for Epilepsy. I claim that I can cure any case of Epilepsy, I don't care of how long standing. I have used this remedy now for 8 years in my practice and for the last 14 months I have made a speciaal business of it; and have treated a number of cases. I have cases treated and cured by my medicine 8 years ago. And from that time on till to the present. I will give you some cases treated of late, one lady 40 years had fits for 37 years every 2 weeks. She commenced taking my medicine one year today and she never had a fit after she commenced taking my medicene. Another lady 15 years old had fits for 10 years every 2 weeks. She commenced taking my medicine 17 months ago and she never had a fit after she commenced taking my medicene, she took medicine 7 months then stoped it off. As a rule will take 9 month to perfect a permanent cure. Which I can tell only after the patient has commenced taking my medicene. I have stoped them of at 6 month etc. Another gentleman 32 years old had fits for 7 years from 3 to 5 times every night. He commenced taking my medicene 14 month ago. And in 3 weeks after he commenced using my medicene the fits was entirely arrested and he never had any syptoms of them since. At the time he commenced the treatment, he was almost ready for the Asylum. Another lady 22 years old had fits for 19 years from 3 to 7 times a week, she commenced my treatment 3 month ago, and she is doing all right, had no fits since. Another I am sorry to say is a Brother doctor of the east Penn had fits for 13 years. He commenced taking my treatment 5 months ago, and is doing all right. He had a one fit after he commenced taking my medicene. I only had 3 cases of all the patient I treated that had any fits after they commenced taking my medicene. And so on I could tell you of lots of other treated with the same results. I have kept my medicine a secret so far and will yet for a while. I shall make a disclosure in the fortune with the practice and experience. I had had I came to the conclusion to publish it to the profession. And the world. I have so much faith and confidence in my remedy, If any body doubt my curing effects, I will make a written contract with the patient to cure him or no pay. I know that I can do more good with my remedy than anything else that ever was prescribed in the way, treating Epilepsy. The medicene can only be got directly from me. It will not be sold by druggist.

Yours Truly

DR. ——————

METEOROLOGICAL RECORD,

For the week ending February 6, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-meter	Thermometer.	Relative humidity.	Direction of wind.	Velocity of wind.	Weath'r.	Rainfall in inches.	Daily mean.			Daily mean.			Daily mean.		
								Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.—31	29.93	26	26	27	27	64	3	61	N.W.	N.W.	12	15	F.	C.		
M.—1	29.98	26	26	25	24	64	3	62	W.	W.	12	11	O.	O.		
T.—2	30.00	26	26	25	24	65	3	63	N.W.	E.	10	12	O.	O.		.28
W.—3	29.90	26	26	25	24	65	3	63	N.	N.	10	12	N.	N.		.33
T.—4	29.98	26	26	25	24	78	7	62	E.	N.W.	12	13	P.	C.		
F.—5	29.98	26	26	25	24	78	7	62	N.W.	N.W.	12	13	P.	C.		
S.—6	30.29	19	27	19	19	70	53	64	N.W.	W.	12	9	C.	C.		
EP	29.99	28	35	22	22	74	73	72			11	12				.16

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; R, rainy; S, smoky; T, threatening; N, snow. + Indicates trace of rainfall. ** Mean for week.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, FEBRUARY 6, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from		
				Infectious diseases.	Acute lung diseases.	Scarlet fever.
New York . . .	1,515,261	790	289	11.33	17.82	2.64
Chicago . . .	1,669,850	100	—	—	—	—
Philadelphia . . .	1,046,364	525	181	14.63	15.01	1.90
Brooklyn . . .	806,343	387	126	13.52	18.20	5.72
St. Louis . . .	451,770	150	—	—	—	—
Boston . . .	434,171	185	55	9.72	21.36	3.78
Portland . . .	394,260	125	46	8.86	18.20	.80
Cincinnati . . .	296,908	125	34	11.40	24.70	3.20
Cleveland . . .	262,000	105	—	—	—	3.80
New Orleans . . .	242,059	98	34	15.30	12.24	2.04
Pittsburg . . .	240,000	100	—	—	—	8.16
San Francisco . . .	240,000	125	35	8.00	22.20	4.00
Washington . . .	200,262	125	5	—	—	—
Nashville . . .	76,168	17	5	—	11.76	—
Charleston . . .	65,163	34	6	2.94	2.94	—
Portland . . .	36,425	23	5	4.35	20.40	4.05
Worcester . . .	31,251	20	24	76.00	8.00	—
Utah . . .	77,696	53	10	7.56	23.35	3.78
Fall River . . .	74,398	—	—	—	—	—
Cambridge . . .	70,628	26	9	—	16.00	—
Lynn . . .	55,727	14	10	14.28	28.56	7.14
Hartford . . .	41,341	24	3	8.33	12.48	4.16
Springfield . . .	41,119	15	5	6.66	—	—
New Bedford . . .	40,733	—	—	—	—	—
Salem . . .	30,801	20	6	10.00	—	—
Chelsea . . .	27,909	15	9	26.66	6.66	6.66
Hawaii . . .	27,412	9	2	22.22	—	20.00
Providence . . .	24,440	7	3	14.29	—	14.28
Glocester . . .	24,651	9	3	32.22	11.11	—
Newton . . .	24,379	5	2	20.00	—	20.00
Malden . . .	23,031	8	1	—	12.50	—
Fitchburg . . .	22,037	8	2	—	—	—
Leominster . . .	11,977	9	—	28.56	—	—
Pittsfield . . .	17,281	6	1	—	83.30	—
Quincy . . .	16,723	5	3	26.00	26.00	—
Northampton . . .	14,960	6	2	16.66	33.33	—
Newburyport . . .	13,497	5	1	—	—	—
Medfield . . .	11,679	1	0	—	—	—
Hill Park . . .	10,193	3	2	33.33	—	—
Peabody . . .	10,158	3	1	—	—	—

Deaths reported 2,680: under five years of age 890; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 326, acute lung diseases 503, consumption 310, diphtheria and croup 131, scarlet fever 71, typhoid fever 35, diarrhoeal diseases 22, whooping-cough 19, cerebro-spinal meningitis 15, erysipelas 10, puerperal fever 3.

From diarrhoeal diseases New York 11, Philadelphia 5, Lowell 2, Cincinnati, Cleveland, Washington and Worcester 1 each. From whooping-cough New York 1, Boston and Pittsburgh 3 each, Philadelphia and Cleveland 2 each, Gloucester 1 each. From Puerperal fever New York 1 each. From cerebro-spinal meningitis New York and Philadelphia 3 each, Brooklyn and Washington 2 each, Worcester, Salem, Taunton, Gloucester and Quincy 1 each. From erysipelas New York 4, Cleveland 2, Brooklyn, Boston, Springfield and Northampton 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending January 23d, the death-rate was 35.4. Deaths reported 6,884: acute diseases of the respiratory organs (London) 1,465, whooping-cough 254, measles 124, diarrhoea 41, diphtheria 38, scarlet fever 32, fever 26, small-pox (Liverpool) 3.

The death-rates ranged from 17.3 in Huddersfield to 60.9 in Brighton; Birmingham 27.2, Bradford 20.5, Cardiff 24.5, Gateshead 21.2, Hull 19.1, Leeds 20.3, Leicester 19.1, Liverpool 40.0, London 46.0, Manchester 29.1, Newcastle-Tyne 24.0, Nottingham 23.8, Sheffield 21.8, Sunderland 23.6, W. Ham 30.5.

In the thirty-three lesser towns of England and Wales with an estimated population of 10,185,736, for the week ending January 30th, the death-rate was 32.1. Deaths reported 6,275: acute diseases of the respiratory organs (London) 1,192, whooping-cough 241, measles 92, diphtheria 39, diarrhoea 34, fever 25, scarlet fever 24.

The death-rates ranged from 18.8 in Sunderland to 47.2 in Croydon; Birmingham 19.8, Bradford 20.7, Hull 23.9, Leeds 21.8, Leicester 21.2, Liverpool 33.1, London 41.0, Manchester 27.6, Newcastle-on-Tyne 22.8, Nottingham 26.6, Portsmouth 32.5, Sheffield 20.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 6, 1892, TO FEBRUARY 12, 1892.

February 5, 1892. The following named officers, having been found by Army Retiring Boards, incapacitated for active service on account of disability incident to the service, are by direction of the President, retired from active service this date, under the provision of Section 1251, Revised Statutes: CAPTAIN HENRY G. BURTON, assistant surgeon, CAPTAIN ARTHUR W. TAYLOR, assistant surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 13, 1892.

P. H. BRYANT, assistant surgeon, ordered to Naval Hospital, Philadelphia, Pa.

H. T. PERCY, passed assistant surgeon, detached from C. S. S. "Patterson" and granted leave for two months.

C. J. DECKER, passed assistant surgeon, detached from Naval Hospital, Philadelphia, and to C. S. S. "Patterson."

JOHN F. URKE, passed assistant surgeon, ordered to Naval Hospital, Portsmouth, N. H.

HOWARD WELLS, surgeon, detached from Naval Hospital, Portsmouth, and wait orders.

JOSEPH A. GUTHRIE, assistant surgeon, ordered to Naval Station, Port Royal, S. C.

L. L. Young, assistant surgeon, detached from Naval Station, Port Royal, S. C., and to the Receiving-ship "Independence."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING FEBRUARY 6, 1892.

PURVIANCE, GEORGE, surgeon. Detailed as Chairman, Board of Examiners. February 3, 1892.

HUTTON, W. H. H., surgeon. Detailed as member Board of Examiners. February 3, 1892.

SAUTELLE, H. W., surgeon. Granted leave of absence for ten days. January 30, 1892.

IRWIN, FAIRFAX, surgeon. Granted leave of absence for fourteen days. January 26, 1892.

MEAD, F. W., surgeon. Detailed as recorder, Board of Examiners. February 3, 1892.

CARTER, H. R., passed assistant surgeon. Granted leave of absence for seven days. January 20, 1892.

CARMICHAEL, D. A., passed assistant surgeon. When relieved to proceed to Port Townsend, Wash., and assume command of Station. January 23, 1892.

GLENNAN, A. H., passed assistant surgeon. When relieved to proceed to South Atlantic Quarantine and assume command of Station. January 23, 1892.

WHITE, J. H., passed assistant surgeon. Relieved from duty at South Atlantic Quarantine; to assume command of Service at Savannah, Ga. January 20, 1892.

CARRINGTON, P. M., passed assistant surgeon. When relieved to proceed to Evansville, Ind., and assume command of the Service. January 20, 1892.

MAGRUDER, G. M., passed assistant surgeon. Relieved from

duty at New Orleans, La.; to assume command of Service at Portland, Oregon. January 23, 1892.

VAUGHAN, G. T., assistant surgeon. When relieved to report to the Supervising Surgeon-General. January 20, 1892.

CORR, J. O., assistant surgeon. Ordered to examination for promotion. February 3, 1892.

STONER, J. B., assistant surgeon. Ordered to examination for promotion. February 3, 1892.

CONDIT, A. W., assistant surgeon. When relieved to proceed to Wilmington, N. C., and assume command of the Service. January 23, 1892. Ordered to examination for promotion. February 3, 1892.

GARDNER, C. H., assistant surgeon. Assigned to temporary duty at Baltimore, Md. January 27, 1892.

PROMOTIONS.

CARTER, H. R., surgeon. Commissioned by the President as surgeon. January 28, 1892.

VAUGHAN, G. T., passed assistant surgeon. Commissioned by the President as passed assistant surgeon. February 8, 1892.

GARDNER, C. H., of Maryland. Commissioned by the President as assistant surgeon. January 28, 1892.

AN ARMY MEDICAL BOARD.

An Army Medical Board will be in session in New York City, N. Y., during April, 1892, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before April 1, 1892, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character and moral habits. The candidate must be between twenty-one and forty-eight years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C.

C. SUTHERLAND, Surgeon-General U. S. Army.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held on Monday, February 22, 1892, in the Medical Library, 19 Brattleton Place, at 8 o'clock P. M.

Dr. T. M. Botch: "Improved Methods of Modifying Milk for Infant Feeding."

Dr. E. Reynolds: "Rapid Methods of Repairing the Pelvic Floor in Primary and Secondary Operations."

G. G. SEARS, M.D., Secretary.

MEDICAL ASSOCIATION OF GEORGIA.—The Forty-third Annual Session will meet in Columbus, Ga., on April 20, 21, 22, 1892.

DAN H. HOWELL, M.D., Secretary, Atlanta, Ga.
G. W. MULLIGAN, President, Washington, Ga.

BOOKS AND PAMPHLETS RECEIVED.

Poliomyelitis with Perineuritis. Tumors of the Brain. By J. T. Eskridge, M.D., Denver, Col. Reprints. 1891, 1892.

Essentials of Medical Electricity. By D. D. Stewart, M.D., and E. S. Lawrence, M.D. Philadelphia: W. B. Saunders. 1892.

Structure of the Rectum. A Study of One Hundred and Thirty-eight Cases. Second edition. By Chas. B. Kelsey, M.D. New York. 1892.

Syphils in Ancient and Prehistoric Times. By Dr. F. Buret, Paris. Translated by A. H. Ohmann-Dumesnil, M.D. Volume I. Philadelphia: F. A. Davis. 1891.

A Treatise on Diseases of the Lungs and Pleura. By the late Wilson Fox, M.D., F.R.S. Edited by Sidney Coupland, M.D., F.R.C.P. Philadelphia: P. Blakiston, Son & Co. 1892.

Consumption: How to Prevent it and How to Live with it. By N. S. Davis, Jr., A.M., M.D., Professor of Principles and Practice of Medicine, Chicago Medical College, etc. Philadelphia: F. A. Davis. 1891.

Addresses.**THE OBJECTS, PLANS AND NEEDS OF THE LABORATORY OF HYGIENE.¹**

EXTRACTS FROM AN ADDRESS DELIVERED AT THE OPENING OF THE LABORATORY OF THE UNIVERSITY OF PENNSYLVANIA, FEBRUARY 22, 1892.

BY JOHN S. BILLINGS, M.D.

FROM those who have preceded me you have heard of the origin of this laboratory, and something of the wishes, hopes, and expectations of the public with regard to it, as indicated by the donor, and by representatives of the University and the State.

You see clearly that this magnificent gift imposes a heavy responsibility upon those who are charged with the duty of managing it, and of seeing that it is so used as to meet the many and various demands which may rightfully be made upon it: and, in attempting to explain to you briefly what the laboratory now is, and why it is as it is, I come before you oppressed with a keen sense of this responsibility, which is not lessened but rather increased by the fact that I feel that I am speaking to friendly critics.

For this new building, with its equipment and resources, is but an implement—a piece of mechanism—which may be used to shape products of vast importance, not only to the world as it is, but to generations not yet conceived; or which, on the other hand, may be so used as to be of little more importance to humanity than the toy tool chest or the doll's house of a child.

What this use shall be depends upon the force and skill applied to it; upon the materials submitted to it; upon the ability of those who guide it to foresee the direction in which at each moment of time it is best to move it; upon the knowledge and patience of those who are working in it; and, when all these are at their best, the results must still depend upon the decrees of Divine Providence, upon circumstances which no man can fully foresee, and which, therefore, no man can, with certainty, control to the end desired.

The position of laboratories in their relations to education, to science, to technology, and to the executive departments of governments and the welfare of the public, has become a very notable one within the last fifty years. A laboratory—or, as it was called in old times, an "elaboratory"—is, as its name indicates, a place for labor, for work—and especially for skilled labor, in the making of delicate and difficult observations and experiments; for analysis, to determine composition and causes; for synthesis, to determine the results of new combinations; for solving old problems, and for stating new ones. It is not a museum, or a store-room, or a show place, nor does this kind of a laboratory offer much for sale, except opportunity.

Only an opportunity—just a few possibilities, offered to the man who desires knowledge, who wants to see, and touch, and try for himself. Yet this offer of such an opportunity is what distinguishes it from those institutions established for the benefit of individuals.

The ideal laboratory of the alchemist or philosopher of by-gone days was a mysterious, dusky place, the operations in which were kept a profound secret, and which thus gained in repute what they could not have obtained by publicity and free criticism.

Laboratories planned and fitted for public use, offering to any one who is able and willing to pay a mod-

erate fee, and to submit to a few simple regulations, not only opportunities for learning the details of the processes carried on therein, but also facilities and means for making special research as he could only obtain otherwise at great expense and loss of time; such laboratories, I say, are all of comparatively recent date.

It is not yet twenty years since the first separate institution of this kind was established for hygiene—and even now there are not more than a dozen such laboratories, specially built and fitted for their purpose, in existence throughout the world. Of these, the best known is probably that of the University of Munich, under the direction of Professor Pettenkofer, while the largest is that of Berlin.

This laboratory is the first structure of its kind erected in the United States, and it therefore opens a comparatively new field of work in this country. What is the nature of this field, and what are its boundaries? The object of hygiene is to preserve and to improve health, and there are few matters affecting the physical, intellectual, emotional, and moral condition of man as an individual, or of men in communities, that may not come within the scope of its investigations. The destruction or avoidance of causes of disease is but a part of its objects—it is at least equally concerned with the means of making a man better fitted to resist these causes. "That kind of health," says Montesquieu, "which can be preserved only by a careful and constant regulation of diet is but a tedious disease." Disease, like health, is a vague term, including widely different and often very complex conditions, processes, and results, which must be observed, classified and described in such a way that different men, widely separated in space and time, may know that they are seeing the same things, and thus may have the benefit of each other's experience.

In its scientific aspects, then—those which relate to definite and precise knowledge—hygiene rests largely on physiology and pathology, the third leg of the tripod being formed by vital statistics; while, in its practical aspects, it must rest on chemistry, physics, and the data of sociology and politics. . . .

The physician deals with sick men, and his first question is, What is the matter with this person? That is, what group of symptoms does he present, and to what derangement of his mechanism are these due? The hygienist deals with two sets of problems—the first relating to men who are not sick, and how their health and vital resistance-power are to be not only preserved but improved and strengthened; the second relating to sick houses, feverish blocks or wards, infected localities—where the first questions to be solved are, What are the causes of this condition of things? how have they found entrance? are they still acting?

In the investigation of causes he must consider not only the immediate or exciting, but also the remote or predisposing; not only those which are preventable, but those which, with our present knowledge, are unpreventable; and thus it is that heredity, race, local meteorology, occupation, and many other circumstances must be studied by him, as well as the effects of food, clothing, habitation, poisons and viruses. . . .

The recent advances in our knowledge as to the action of certain micro-organisms in the production of disease in animals and man have been largely made by laboratory methods, and indicate clearly that the study of bacteria and microzoa, and of their development,

¹ From advance sheets of the Medical News, February 27, 1892.

products, and effects, must be an essential part of the work of an hygienic laboratory, which should provide the peculiar arrangements and apparatus which are required for this sort of work. In fact, several so-called hygienic laboratories are simply bacteriologic laboratories, the interest in this particular branch of investigation having, for the time being, overshadowed all others.

Our laboratory, however, must provide also the means for chemic investigations of air, water, food, sewage, secretions, and excretions, and the products of bacterial growth; for testing the effects of gases, alkaloids, and albumoses of various kinds upon the animal organism; for investigations in the domain of physics pertaining to heating, ventilation, house-drainage, clothing, soils, drainage, etc. . . .

Just at present, research is being specially directed to certain minute animal organisms—the microzoa—such as are found in the blood in malaria and in the skin in certain diseases, and to immunity, especially to that immunity which may be artificially produced.

Experimental investigation is a slow process, and very uncertain in its results.

An experiment may be conceived which seems as if it would give important results. The experiment itself would require only a few moments or a few hours if all the apparatus were ready to produce the required conditions, and to record in terms of weight and measure the results obtained. But to make this apparatus in the best form, and to provide the means of recording, may take a year or more, and in making this preparation a dozen problems will come up to be solved by other experiments. You are pretty sure to discover something new, but by no means sure that it will be what you began to seek. Every discovery opens new questions and indicates new experiments, and the precise shape in which the work presents itself varies with place and season.

We cannot foresee precisely the demands which will be made upon us, or which we shall make upon ourselves, but we do know that we shall want some large rooms in which a dozen or twenty men can be at one time taught how to investigate, working under the eye of an instructor; and also a number of small rooms, each fitted for the work of one or two men who have attained a certain degree of skill, and are engaged in original research. In all of these rooms we shall at times need to use microscopes, gas-heating and steam; there will be vapors and fumes produced; there will be delicate instruments scattered about, and the rooms must, therefore, be light, have abundance of gas, steam, and water, hoods and flues for conveying away fumes, and they must have plenty of fresh air without dust.

Many of the things that will be seen through the microscopes will be rapidly changing form, and we shall need pictures as well as descriptions of their different shapes.

The most useful drawings for our purposes are those made by sunlight, and, therefore, we want photo-micrographic rooms.

We shall wish to test the merits of various articles of house-equipment, such as different patterns of steam radiators, of traps, of sinks, and closets, etc., and for this purpose we must have places where they can be fitted and put into use.

We must know what other investigators in other laboratories, and many places besides laboratories, have done and discovered, that time and effort may not be

wasted. We must, therefore, have the books and journals in which these are recorded, which are already many, and coming rapidly. A small library and reading-room is therefore essential.

Much of the apparatus to be used must be either made or specially fitted and adjusted on the spot to meet special indications which it is impossible to foresee, and, therefore, we need a large workshop, with tools and appliances for working in wood, glass and metal, and with power. . . .

The chief object of the existence of this building is to fit a certain number of men from all parts of the country to investigate and solve the problems connected with the securing of the best health and vigor among our people.

We hope, also, that some increase of knowledge will be made here by the workers in the laboratory itself; but the main point to be kept in view is to provide well-trained, scientific, and practical men for other fields of labor. Dr. Mitchell has said that the true rate of advance in medicine is not to be tested by the work of single men, but by what the country doctor is. So, also—and even more so—advance in practical sanitation is not to be measured by laboratory records, but by what health officers and sanitary engineers are able to accomplish.

Even now we *know* much more than we *do*, and the skilled sanitarian too often finds himself in the position of the unhappy daughter of Priam and Hecuba, who could foretell, but to no purpose.

This laboratory is fortunate in being closely connected with, and in the immediate vicinity of, a great medical school, and of great hospitals. As was said before, one of the essential foundations of scientific knowledge of the causes of disease is minute and accurate diagnosis and pathology, and we are, therefore, in constant need of the best knowledge of leaders in these branches of medical science. The hospital is filled with specimens of the results of such causes, acting on the human body—from one point of view, Nature's experiments with poisons cunningly elaborated in the tissues of the body, or with viruses coming from without, upon blood and bone, muscle and brain. Much of the work of this new department will be connected with the results of these experiments.

The laboratory is also fortunate in being located in a great manufacturing city, where the effects of different occupations, of trades dangerous or offensive by reason of dusts, or of vapors, or of waste products, can be readily observed and the materials for study obtained. There is an immense field for a sanitary clinic here, and in the habitations, the streets, the water-supply, and the sewers of Philadelphia.

These clinics, however, cannot, as a rule, be reported for the press, either lay or medical, since to do so would, to a great extent, defeat their object; the great majority of sick houses and manufacturers must be considered as strictly private patients, and their affairs held as confidential. In the case of public institutions, or of public nuisances, a somewhat different rule may apply.

Practical hygiene is to play an important part in municipal government, to secure the best form of which is now one of the most urgent questions of the day. Many of the questions to be decided by city officials as to water-supplies, sewage disposal, etc., require expert knowledge to answer.

Of course, the subject of hygiene and the work of a

university department devoted to the increase and diffusion of knowledge in sanitary science extends far beyond the experiments and demonstrations for which this laboratory is specifically fitted.

Bacteriology, chemistry, pathology, physics, and medical and vital statistics give us the foundation, but sociology and jurisprudence must also be studied in their relations to sanitation to obtain the best results.

It is in and to the home and the workshop that these results are to be applied, and he who aspires to be his brother's keeper, must know how his brother lives.

Labor questions, education questions, maritime and inter-state commerce questions, and methods of municipal finance and government, are all intimately connected with matters of personal and public hygiene, and economic consequences, as well as health, must be considered in the advice and regulations of the sanitarian.

I count it as fortunate, therefore, that there is a law school and a school of finance and political economy in this University to which the Department of Hygiene can look for advice and friendly criticism when these are needed, as they surely will be.

And now a very few words as to the needs of the laboratory. First of all it needs men — men thirsting for knowledge, and fitted by previous training and education to come here and acquire that knowledge, not merely the knowledge that exists in books or that the teachers in this laboratory may possess, but that which is yet unknown, the weight of that which no one has yet put in the balance — the shape and size, and powers for good or evil of things the existence of which has not yet been demonstrated — men who will patiently and earnestly seek the answers to the questions, "what?" "when?" and "how?" in the hope that thus they may by-and-by obtain some light upon the more difficult problems of "whence?" and "whither?" even if they may never be able to answer "why?"

There are not many such young men whose tastes will be in the direction of these lines of research, and of these there will be very few who will have the means to support themselves while engaged in the work. We need, therefore, the means to help them in the shape of half-a-dozen fellowships, paying about five hundred dollars a year each, and granted only to those who give satisfactory evidence of capacity and zeal.

The second thing we want is a demand on the part of the public for really skilled, well-trained sanitary investigators and officials, such as we hope to send out from here; we want a market for our product; we want the legislators of this and other States, and of our rapidly-growing municipalities, to be educated to appreciate the importance and practical value of such health officials, and to give the best of them employment.

Thirdly, the laboratory wants the coöperation and assistance of sanitary authorities and inspectors, and especially those of this city and State.

It needs to know from time to time what they are interested in and are working at, to have the opportunity of showing to its students cases of special interest — sick houses, localized epidemics, special forms of nuisance.

And, on the same principle, and for the same reasons, it desires to have its attention called to special methods of heating, ventilating, and draining buildings, and especially public buildings, such as schools, hospitals,

prisons, churches and theatres, and to matters connected with the hygiene of manufacturing establishments and special occupations, methods of disposal of offensive or dangerous waste-products, of protecting workmen against dust, gases, etc.

In short, we want to know how these things are managed by the men who have a practical interest in them; and if, in our turn, we can suggest improvements, we shall be glad to do so.

Fourth, the laboratory wants a reference library as complete as it can be made, and always up to date. Many of the books and journals required must be purchased, and for this purpose a special fund is needed, but many of the works required can only be obtained by gift.

Thus, we want all the reports of boards of health — State and municipal — of municipal engineers, water-works and water commissioners, park commissioners, etc.

We want the catalogues and circulars of all manufacturers of heating and ventilating apparatus, of plumbers' supplies and house fixtures, of electric and gas fixtures, of machinery and apparatus connected with water-supply and sewage-disposal.

We want copies of plans and specifications of large buildings of all kinds.

And these things can only be obtained through the aid and good-will of manufacturers, engineers, architects and sanitarians all over the country; and this aid I venture to ask, feeling sure it will be granted by those who know what is wanted.

I will mention but one more special want to-day, and that is of means for the proper publication of illustrated reports and accounts of the work done in the laboratory.

In the meantime we must be patient, and not too eager to touch the fruit of the blossom that is not yet blown.

In the chambers of this laboratory are to be explored and tested some of the strangest and subtlest of the manifestations of force which surround and are within us.

Here we are to deal with problems of life and death, to seek to unravel some of the webs which bind and choke our children, and which make our strong men helpless, that we may for a time, at least, put these trammels aside or sever them.

I dare not attempt to promise or to prophesy as to the work which will be done here, or as to the future of this new department of the University.

Those who are to be connected with it may not do the best that can be done, but at least they must do the best they can, and, if needful, give place to others who can do better.

Those to whom we owe this laboratory and its equipment and endowment, have been generous and wise in their generosity, which has been in accord with the teaching of the son of Sirach, "Having grace in the sight of every man living, and detained not for the dead."

Death comes by many paths to one or other of the three porches of the microcosm through which he enters, and brings his poppy flowers to all doors soon or late; but if we knew that which we might know, and did that which we might do, he would be preceded by fewer heralds of suffering, and would arrive only when we were ready to be "hushed in the infinite dusk."

If "ye shall know the truth, the truth shall set you free"—not free from change, or from grief, or from the final passage beyond the veil, but free from causeless fears, from unnecessary pain, from useless labor; and this is a part of that wisdom "which passeth and goeth through all things," and is "the brightness of the everlasting light, the unspotted mirror of the power of God."

ADDRESS

DELIVERED AT THE OPENING OF THE LABORATORY OF HYGIENE OF THE UNIVERSITY OF PENNSYLVANIA,
FEBRUARY 22, 1892.

BY BENJAMIN LEE, A.M., M.D., PH.D.,
Secretary of the State Board of Health of Pennsylvania.

MR. PROVOST, LADIES AND GENTLEMEN: — I trust there is no one present on this memorial day and this auspicious occasion whose bosom does not swell with patriotic pride at the thought that he is an American citizen.

Recalling, as we are wont, the virtues of him whom, above all others, we are accustomed to regard as the founder of our liberties, let it be a part of our grateful observance to sum up the blessings which flow from them. And that we may the better appreciate them, let us compare the wretched lot of the denizens of cities of the old world, groaning under the iron heel of despotism, with our own more highly favored circumstances. The tyrannical rulers of those down-trodden people actually presume to interfere with their meats and drinks, — forbidding them to quench their thirst with water enriched by the sewage of cities, hallowed by the infusion of the remains of their dead ancestors, or delicately tinted with the drainage of coal mines; or to refresh themselves with beer rendered aromatic and enlivening by cocculus indicus and strychnine, or wine manufactured from the juicy apple and the generous turnip, or tea composed of rotten leaves and catechu and colored with verdigris, or coffee innocent of Java and Mocha, or chocolate in which the offensive cocoa-butter has been entirely replaced with tallow. They are not permitted to eat the flesh of tuberculous cattle and trichinous swine, while we are freely allowed to feast on those which have been condemned for their markets. Even the little children are forbidden the delights of sucking candy brilliant with arsenic, or munching buns beautified with chrome yellow. The very air which they breathe is deprived of the fragrant and nutritious elements which we enjoy in ours by the removal of manure and other putrefactive substances from the streets before they have had time to pulverize or decompose.

If they desire to ride in public conveyances, they are compelled to obsequiously sit, instead of having the opportunity of athletic exercise and muscular development by hanging on to straps suspended from the roof of the vehicle; or if, perchance, they prefer their own equipages, they have no escape from the dull monotony of smooth and noiseless pavements, so different from our charming variety of cobble-stone and car-track, of hillock and hollow. Thus these unfortunate are hedged in on every side by onerous ordinances and petty infringements of their liberties. When we add the humiliating fact that those who govern their cities and inflict these burdens upon them are men of their own race and nation, instead of being of alien birth or parentage, what is needed to complete the picture of

their misery or to demonstrate the immense superiority of our free institutions? As a result of the admirable training which we receive from the foreigners in authority over us, we have acquired to a distinguished degree the divine virtue of patience; so that an American citizen is recognized at once all over Europe by the lamb-like way in which he submits to physical inconveniences and pecuniary impositions.

But lest this hurried *r  sum  * of our causes for exultation should make us too vain-glorious, I would ask your attention for a moment to a feature of the republican form of government which is, perhaps, less encouraging.

It has been said in regard to our legislative bodies, that, as a fountain cannot rise above its source, so we cannot expect in our legislatures a higher degree of intelligence and education than the average of that possessed by all classes of the population, whom they represent, by whom they are elevated to office, and whom they fear to offend.

It follows from this that legislation of what may be termed the higher order, which recognizes the arts and sciences, and aims to lift the people to a higher plane of culture and civilization, and which is founded on the most recent revelations of science, is not to be expected of our municipal and State legislators. And, indeed, so true is this of our own State, that a clause exists in the constitution forbidding the outlay of the public funds for any such purposes. Hence, if institutions of learning of a high grade or devoted to specific objects are to exist among us, they must owe their origin, and to a great extent their support, to the public spirit and generosity of private citizens. Perhaps this is not an unmixed evil. Perhaps it is well that in the mad haste to get rich quickly, which characterizes our people, there should be a constantly present condition which evokes brilliant examples of public giving as contrasted with individual grasping. Certainly magnificent instances of such liberality exist all over our broad land, and, perhaps, nowhere have more frequent benefactions of this kind increased the opportunities of a great institution of learning, than have of late years been poured into the lap of the venerable University who has called us together to-day to rejoice with her over the reception of her latest gift, and the opening of the newest and loveliest flower in her coronal.

At a regular meeting of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania, held November 12 and 13, 1891, a communication was received from the trustees of this university announcing the early opening of its new Laboratory of Hygiene, and presenting a brief curriculum of its proposed line of instruction; whereupon the following resolutions were adopted:

"Resolved, That this Board has received with sincere satisfaction the formal announcement of the approaching opening of the Laboratory of Hygiene of the University of Pennsylvania, considering that this event marks an era in the progress, not of science only, but of civilization in this State.

"Resolved, That the secretary be instructed to communicate with Dr. William Pepper, Provost of the University, and with Dr. John S. Billings, Director of the Laboratory of Hygiene, suggesting a conference for the purpose of formulating a plan by which this Board may avail itself practically of the facilities to be afforded by the laboratory for the investigation of

disease, and of the means for its prevention, for the analysis of foods, water and other beverages, and for bacteriological studies.

"Resolved, That in a definite co-operation between the University and the State Board of Health in the prosecution of such researches, this Board recognizes an opportunity, not only for mutual aid, but for advantage of the greatest moment to the entire Commonwealth."

In accordance with the above resolutions, such a conference has been held, and to me has been assigned the duty of briefly stating the conclusions which were reached, premising, however, that they have not as yet been submitted to the trustees, and may be to some extent modified before either body is called upon to consider them.

The necessity of a Laboratory of Hygiene to the State Board of Health has been urgently felt, and arises out of the duties imposed upon the latter by Section 5 of the Act of Assembly establishing it, which reads as follows:

"The State Board of Health and Vital Statistics shall have the general supervision of the health and lives of the citizens of the Commonwealth, and shall especially study its vital statistics. It shall make sanitary investigations and inquiries respecting the causes of disease, and especially epidemic diseases, including those of domestic animals, the sources of mortality, and the effects of localities, employment, conditions, habits, food, beverages and medicines on the health of the people. It shall also disseminate information upon these and similar subjects among the people. It shall, when required by the governor or the legislature, and at such other times as it deems important, institute sanitary inspections of public institutions or places throughout the State."

Now, to carry out in any adequate degree, the purposes of the law with regard to investigating the causes of disease, and the effects of foods, beverages and medicines on the health of the people, two things, among others, are absolutely essential: first, that the Board should have means and opportunities for making or procuring chemical analyses; and secondly, that it should have means and opportunities for prosecuting what are now known as bacteriological examinations—the study of the germs of disease. And, it goes without saying, that where the interests of the health and lives of five million people are concerned, these means and opportunities should be on a generous scale, and should conform to the most recent developments of scientific hygienic research, both in this country and in Europe. It does not at all meet the intention and requirements of the statute, that the Secretary of the Board should spend a few cents on test-tubes and chemicals, or press his old Dolland microscope, handed down from a previous generation, into the service of the State. Nor, is it fitting that this great Commonwealth, with its millions of revenue, should be depending, as it has done, I say it with burning cheeks, on the charity of private chemists, who have, in a spirit of generous patriotism, placed their services at the disposal of the Board in order to enable it, in some slight degree, to meet the claims that are constantly and properly made upon it, for the analysis of suspected waters and foods. It is hoped, therefore, that the trustees will see their way clear to allowing the Board to refer applications of this kind to the laboratory for investigation. The Board, for its part, will make

every effort to obtain from the legislature a reasonable appropriation for such purposes, distinct from its general appropriation, which will enable it, to meet at least, the cost of all work done for the State.

Further, Section 9, of the Act creating the Board, instructs it, "from time to time, to engage suitable persons to render sanitary service or to make or supervise practical and scientific investigations and examinations requiring expert skill, and to prepare plans and reports relative thereto." Observe the phrases: "suitable persons," "expert skill." Heretofore the Board has been compelled to call to its aid for these objects simply medical men, intelligent, educated, sound practitioners, but without that special training and equipment which would render them "suitable persons" in any strict, technical, construction of the expression, or would furnish them with "expert skill." Here, again, the laboratory will prove the right hand of the Board, giving just that instruction which a sanitary inspector needs to fit him for his special work. And, on its side, it will be the object of the Board to pursue more persistently than it has in the past, its purpose of obtaining a thorough sanitary organization of the State under legislative sanction and compulsion, the result of which will be to create a constantly increasing demand for just such trained practical sanitarians as this school will graduate. In this view of the case it might be the part of wisdom for you, gentlemen, trustees, to place a certain number of scholarships at the disposal of the Board.

Finally, it is desirable that publicity should be given to the important work which will be carried on in this institute, which, I risk nothing in saying, after a careful inspection, and after comparison with other similar laboratories, will be far in advance of any in this country, and the peer of any abroad; it is highly desirable, I say, that this work should be frequently brought to the notice of the legislature, the medical profession and the public; and I therefore suggest that its director present a stated report, quarterly, or at such interval as may be deemed expedient, to the State Board of Health, of all investigations here prosecuted directly in the interest of the public health, which report shall form a portion of the annual report of the Board, to be transmitted to the governor, and of which a certain number of reprints shall be furnished to the trustees for general distribution, as well as for preservation in the archives and various libraries of the University.

The edifice whose inauguration has drawn our willing feet hitherward, ladies and gentlemen, is a temple of Hygieia in a true sense than those fair structures whose marbles flashed back the morning light on the hills of Greece and Rome.

It is in honor of the "sweet, smiling Goddess of Health" that we have met.

The ancients were right in making the divinity whose especial care was the bestowment and maintenance of health, a feminine conception; since woman, as the wife, the mother, the nurse, has for her special function that daily ministry to the bodily welfare of husband and of offspring, that constant presence in and care of the home which are the two essentials to health in the individual and in the family. Her embodiment must needs have been youthful, as presenting ever to the mind of the entranced beholder that period of life when a blood unvitiated by vice or excess courses through a frame unmarred by violence or exposure, and colors a cheek unstained by sin. Purity

must look forth from her eyes and truth sit enthroned on her brow, for unbridled passion and soul-torturing deceit are alike inimical to perfect health. Her form must be lithe, vigorous and well nourished, but not redundant, as warning her devotees that neither asceticism on the one hand, nor gluttony or voluptuousness on the other, are allowable in her worship. Cheerfulness must radiate from her every feature, for gloom and despondency are the recognized foes of sanity, whether of body or mind; and over all, pervading expression of face or pose of limb, must be that indescribable charm of gentleness, as teaching her votaries that in the mutual interchange of kindly sentiment and act, they shall greatly promote the common health and the common weal. And so has the charming inspiration come down to us, immortalized by the sculptor's cunning hand, — a frank and joyous maiden, full of tender grace, robed in chaste and flowing vestment. The fabled daughter of Esculapius, her temple ever nestled under the shadow of his loftier fane, as does that which we dedicate to-day, and her lovely image was sometimes seen in the same shrine even, side by side with his severer figure.

May I be pardoned for appropriating to her praise the beautiful sonnet of America's most American poet, although addressed by him to a sister divinity whom also we glorify on this national anniversary?

"Who cometh over the hills,
Her garments with morning sweet,
The dance of a thousand rills
Making music before her feet?
Her presence freshens the air,
Sunshine steals light from her face,
The leaden footstep of care
Leap to the tune of her pace.
Fairness of all that is fair,
Grace at the heart of Grace!
Sweet "no" to sin and of hall,
Bringer of life out of naught,
Hygiea, oh, fairest of all
The daughters of Time and Thought!"

Original Articles.

THE CARE OF WOMEN IN PREGNANCY.¹

BY CHARLES M. GREEN, M.D.

It is probably true that the great majority of pregnant women are not seen by their physician professionally until he is summoned to attend them in labor. If serious complications arise during the pregnancy, such as excessive nausea and vomiting, uterine hemorrhage, unusual pain or convulsions, the doctor is necessarily summoned; but the minor ills and discomforts are endured in silence, and no advice is taken except that of relatives and neighbors, who love so well to fill the ears of the young gravida with accounts of their own experiences. In other words, in the great majority of cases, no attention is paid to the hygiene of pregnancy, and the woman arrives at term in good, bad or indifferent condition, as the case may be.

The reasons for this unsatisfactory state of things are not far to seek. Many women believe that pregnancy is a more or less pathological process, and assume that its ailments must be borne as a necessary concomitant of childbearing. They do not know that most of the ills of gestation are preventable, or largely

remediable, by competent medical supervision and advice, and that so far from being pathological, pregnancy is indeed a physiological process, except in occasional instances. Again, probably a large majority of women are ignorant of the fundamental laws of health, and, while perhaps seldom very sick, are seldom quite well. When, in such women, pregnancy supervenes, it is not surprising that it is often attended with pathological conditions. To ignorance, then, both of the ways of correct living and of the advantages of proper advice during pregnancy, must be ascribed largely the unsatisfactory condition in which many women are found when labor overtakes them.

Another reason for the lack of medical supervision during pregnancy is the attendant expense. The great majority of women are attended in labor by contract, so to speak; that is to say, they expect to pay a certain definite fee, usually a small, inadequate one, which shall cover the doctor's attendance during the labor and his subsequent visits during the convalescence. If the woman desires, or feels that she needs, to consult her physician during her pregnancy, she usually seems to take it for granted that advice at such times should involve no additional fees. It is not surprising that for the very small fees for obstetric attendance that obtain in most suburban and rural districts, medical men should be sometimes unwilling to extend their advice over the pregnancy as well as to take charge of the labor and convalescence. On the other hand, most women are unable or unwilling to pay fees for advice on matters relating to their pregnancy.

For one or more of these reasons, to repeat my original statement, the great majority of pregnant women receive no medical advice or supervision. I believe this to be a misfortune, and a detriment to the best interests of the race; and it is the object of this paper to point out the importance, necessity and advantages of proper supervision of pregnancy, how in my opinion it should be exercised, and how the obstacles in its way can be removed.

There is, supposedly, no question but that pregnancy and parturition ought to be, and were in the divine plan intended to be, physiological processes: that in a large proportion of cases they are not so, a somewhat extended experience leads me to believe. Making due allowance for the congenital and acquired defects of general or local character which are certain to make these processes pathological, the fact still remains, in my judgment, that, in a great majority of cases, pregnancy and labor can be brought quite within physiological and normal limits. If this opinion is true, there is no necessity of dwelling on the importance of adopting such measures as will lead to this most desirable end.

The true object of modern medical science is to do away with the necessity of medical art: in other words, the aim of the true physician is to make the further exercise of his profession useless. While the force of this statement is admitted in general, it has not seemed to me that the extent to which it is applicable in obstetric medicine is fully realized. I believe that, accepting the existing states and conditions in which women of the present day are found, very much can be done by competent supervision during pregnancy to bring labor and puerperal convalescence quite near to normal, physiological bounds; whereas experience has abundantly convinced me that to the lack or inadequacy of such supervision much unnecessary suffering

¹ Read before the Boston Society for Medical Improvement, December 28, 1891.

and disaster are due. But to relieve myself of the probable criticism that my expectations of preventive medicine are altogether utopian, let me hasten to add that whatever may be the possibilities of prevention in the field of epidemiology and general medicine by measures of public and private hygiene, the day is doubtless far distant when the services of obstetric medicine and surgery will be found useless.

Supposing the obstacles in the way of medical supervision of pregnancy, —namely, ignorance of its importance and necessity on the part of the patient, and the question of expense on the part of patient and doctor, —can be set aside, let us consider what can be done for the welfare of the young pregnant woman and her prospective offspring, when free and full opportunities for obtaining medical advice are open to her. What are the respective duties of doctor and patient in the premises? Suppose the woman to have passed over one or two menstrual periods, and in the absence of other probable causes of amenorrhea presumes herself to be pregnant: she consults her physician. By a few simple questions he satisfies himself that presumably she is pregnant: is it his duty to proceed to confirm his presumptive diagnosis by a physical examination? In most cases, certainly not. If important plans, as of journeys abroad, of changes of residence or manner of living, are dependent on a knowledge of the woman's condition, it may be necessary to determine, if possible, by physical examination whether pregnancy actually does exist; but under ordinary circumstances it is proper to proceed with a presumptive diagnosis, knowing that time will settle the matter beyond question. But at this time it is important that the physician should make careful inquiry in regard to the patient's general health. Of course, if he has been her medical adviser previously, her temperament, constitution and general condition will be known to him; but if not, he should inform himself on these points, and adopt such measures as may be necessary to promote good general health, and to remedy, as far as possible, constitutional defects. There are some special points, also, on which specific advice should be given: these points will be considered in detail.

Nutrition is a process of great importance in pregnancy, both to the mother and to her child: it is desirable for the mother to be able to put forth all her strength in her labor, and to endure its necessary sufferings with the least possible shock to her system. To this end attention should be paid to her appetite, diet and digestion. Some women during pregnancy have inordinate and perverted appetites, which need to be moderated and controlled. Some purposely restrict themselves unduly, in the hope of thereby retarding fetal growth and of thus having an easier labor. Others for some reason have an insufficient appetite, which needs to be stimulated by proper therapeutic measures. The diet of pregnancy needs differ in no important particular from that which is proper in other phases of hygienic living, unless some special condition requires specific modification. Some authorities believe the food should be especially rich in phosphates, to promote the bony development of the fetus; but it seems reasonable that whatever food is best for the mother may naturally be expected to be most suitable for fetal development. Simple, nutritious diet, in moderate but sufficient quantity, should be advised: candy, pastries and fries should be avoided. The use

of tea, coffee and wine should depend on their effects and on the patient's habit. Some women, who habitually eat too little, may require forced feeding, —a light lunch between meals and at bedtime, of milk, broth, egg-nog, malt, or bread and butter.

Most women at this early period of their first consultation with their physician are suffering more or less with nausea and vomiting, although some happily escape this often distressing symptom. It is not my purpose to discuss the treatment of this affection, which usually disappears spontaneously when the uterus has become an abdominal organ; but rather to express my belief in the importance and wisdom of checking or limiting it in its incipiency. The water which will quench a small blaze will add to the fury of a conflagration; and measures which will control this symptom in the beginning often prove worse than useless when once perverted function has assumed full sway. No one can tell to what end an apparently physiological nausea may attain. While occasionally no therapeutic measure short of induced abortion (and sometimes unhappily not even that) will control this symptom, in most cases simple remedies will suffice to remove it, or keep it within due bounds: it is often found that attention to diet and digestion is all that is necessary. Morning nausea is often proved to be due to a want of nourishment, and is prevented by taking a lunch at bedtime, and another in the morning before raising the head from the pillow. If simple dietary measures do not prevail, the cause should be sought for, and perhaps found, in a displacement or impaction of the uterus, or in an abnormal condition of the cervix: in other cases the cause will be found in a perverted innervation or hysteria. But whatever the cause, it should be found and removed, if possible, before the development of serious results in the patient's condition. A return of these symptoms in the later months should be given special attention.

At the first early interview the condition of the bowels should receive careful inquiry. Not only are most women chronically constipated, but those with whom the function of defecation was previously normal are often disturbed with sluggishness of the bowels in the early months of pregnancy: indeed, constipation is considered by some a symptom of pregnancy in those previously regular. No speedy resort should be had to drugs, but an effort should be made to correct the difficulty by hygienic and dietary measures. The woman should be cautioned not to strain at stool; enemata will suffice to ensure an easy movement when the failure is due to torpidity of the rectum. Much can be accomplished by proper exercise and dietetics; but should such measures fail, others must be employed to insure a regular, daily movement.

The skin is also an important organ of elimination. The better the functional activity of the skin, the less work will be thrown upon the kidneys at a time when unusual demands are made upon them. If the patient has not the habit of daily bathing, the duty of adopting it should be enjoined, the bath to be followed by vigorous friction with coarse towels. Apart from the benefit of stimulating glandular activity in the skin, daily bathing has a sedative effect on the nervous system and tends to promote the functional activity of the bowels, and other digestive and eliminative organs.

Unless the patient has some antecedent affection of the kidneys, there is seldom any disturbance of their function in the early months. Micturition is some-

times frequent, owing to the pressure of the enlarged and anteverted uterus on the bladder, or there may be an irritability of the latter viscus caused by concentrated urine. Women proverbially drink too little water to properly dilute their urine, which is often high colored, of high specific gravity, and excessively acid. This condition is not, of course, peculiar to pregnancy; but it is liable to be aggravated thereby and should receive attention. A glass of water three times a day will often suffice to relieve this condition: failing this, lithia water or acetate of potash may be advised with benefit. Throughout the pregnancy the state of the kidney should be closely watched. By this is not meant that the urine should be examined necessarily at frequent intervals. The patient herself, if of average intelligence, can be taught to do most of the watching, and that, too, without exciting her nervous apprehensions. In these days when water-closets are to be found on every floor of most houses, bedside cabinets and the old-time chamber-vessel are seldom used: as a result, most people rarely see their own urine and are unable to give much information concerning it. It is my custom, therefore, to direct pregnant women to see their urine at least once a day: I instruct them as to the average daily amount in health, tell them that it is important that this amount should be maintained, and ask them to notify me, if they notice any departure from normal standards, either in color or amount. I also ask to be informed of the occurrence of edemas, puffiness of the eyelids, headaches, disturbances of vision, nervousness, and indeed of any symptom of ill-feeling. Twice or three times in the later months it is well for the physician to examine the urine; but even without such examination there is no occasion for apprehension of eclampsia so long as the urine is normal in amount, so long as the nervous system is in stable equilibrium, and so long as there is no apparent indication of central nervous irritation: the mere presence of moderate edema and albuminuria, without other symptoms, does not disturb me in the least, although it makes me watchful.

As may be inferred from the last paragraph, the condition of the nervous system should receive special attention throughout pregnancy. Making due allowance for a poor inheritance, most women can be brought into a state of nerve equilibrium by a skilful guidance on the part of the physician into ways of correct living. There is no better medicine for unstable nerves than a plenty of sound sleep. If, therefore, it is found that the patient's sleeping habits are unsatisfactory, the cause should be sought for and removed. Suitable exercise, and a warm bath and a lunch at bed-time are often efficacious; but sometimes a course of bromides may be advisable. In the later months the woman sometimes fails to sleep because she cannot lie comfortably in bed. She may be accustomed to sleeping on her side, but finds herself unable to lie comfortably on her side when the abdomen is much enlarged. In such cases I have found that the use of a small pillow, upon which the abdomen can rest as upon a shelf, has been productive of comfort and repose. A pregnant woman's nervous system is often grievously upset by the injudicious conversation of her friends and relatives. Some people are singularly, nay criminally, indiscreet in their talks with pregnant women. Accounts of appalling hemorrhages, of convulsions, and of the graver obstetric operations are certainly not conducive to nerve quietude in the preg-

nant state. Neither is it judicious for the gravida to read all about it in the family medical books: such books are responsible for much harm. The more ignorant of the act of parturition a woman can be kept, the better: I would not have her know that there is such a thing as a placenta even. I always advise against any reading or any conversation with friends on the whole subject, and warn against listening to what may be well meant in the way of lay advice, promising that I will answer any question, if it be proper.

If a woman dresses properly at other times, she needs make no changes during pregnancy, except to provide for the gradually enlarging uterus. Most women, however, still cling to the garter and the corset, both of which are more than usually deleterious during pregnancy. It is sometimes difficult to induce a woman to lay aside these abominations even in the later months; but such a course should be advised, and the reasons why should be explained. It is gratifying to know that some women are substituting a comfortable waist for the corset; and are suspending the skirts from the shoulders, instead of buttoning them tightly around the waist. Garters are also to some extent giving way to tapes attached to the corset-waist. It will be the better for all women, when they follow the advice of physicians in these matters of dress.

How much exercise ought a pregnant woman to take? It is often difficult to prescribe the exact amount that is suitable for any given person. Most women obtain all needed exercise in the pursuit of their usual affairs; some, however, in the leisure class, need more than their habitual activity. Walking is probably the most suitable exercise in pregnancy, not carried, however, to the point of fatigue: the august lady at the court of St. James set her subjects a good example in this respect. In the latter weeks, when walking may become difficult, driving may well take its place. One might hesitate to prescribe gymnasium exercise for the pregnant; yet I recall one patient, habituated from early childhood to gymnastic exercise, who continued her training during nearly the whole of her gestation, omitting only the heavier work, and she had a most rapid and easy labor and an uneventful convalescence. Fortunately, most women are engaged in house-keeping duties, and except for the want of the open air housework is probably the healthiest occupation a woman can have. It is difficult sometimes to induce women to take sufficient open-air exercise; but there is no question that most women are greatly benefited by it during pregnancy, and have easier labors in consequence. Women should be willing to train themselves in some degree for their labor, as an athlete would train himself for a race.

Pregnant women should be cautioned against indiscriminate exertion at the times which would be menstrual periods were they not pregnant. I have too often seen the unfortunate results of indiscretions at these times. When miscarriage occurs, it is usually at the time of a menstrual epoch. Some women are made aware of the approach of these epochs during pregnancy by certain unmistakable sensations and feelings of malaise; but to avoid oversight in those not so warned, they should be advised to mark off on their calendars the days when menstruation would ordinarily occur. In these days no undue exertion should be made, and exercise should be somewhat restricted: above all at such times nervous excitement should be avoided.

This leads me to speak of the propriety of sexual intercourse during pregnancy. To many women I believe coitus during pregnancy is distasteful, to many even obnoxious, to all, in my opinion, it is more or less injurious. Aside from the mechanical disturbance of the uterus by impact, the sexual act injuriously congests the pelvic vessels, excites and then depresses the nervous system, and is often a cause of miscarriage, especially when practised at a menstrual epoch. So far as my knowledge of the animal creation goes, the pregnant female will not suffer the sexual approach of the male, but will fight, if necessary, to protect herself. Certainly among enlightened human beings, men who have at heart the welfare of wife and children should be willing to forego sexual indulgence during the time when the wife needs all her vital powers for her own well-being and that of her expected offspring. Many men and women err through ignorance, and are grateful for advice on this subject.

It is believed by some that the pelvis should always be carefully measured in the early months of pregnancy with a view to anticipating some serious complication in labor at full term. In women who have a history of difficult and pathological labors, such a course is wise; but in primigravidae it has never seemed to me warrantable to subject them to a routine examination unless there was a reasonable suspicion of some deformity in the parturient canal. Marked forms and degrees of pelvic deformity are likely to be suspected during pregnancy, if the patient is under observation, and in such cases pelvimetry should be made. The minor degrees of pelvic contraction, on the other hand, even if suspected and ascertained to exist, would not warrant obstetric interference before full term in a woman pregnant for the first time. In such cases the child is often proportionally small, and is safely delivered either by nature or by art. If, however, the first labor proves disastrous, and the woman demonstrates her unfitness to give birth to a full-term child, premature labor can be induced in subsequent pregnancies. I do not, therefore, include pelvimetry among the necessary duties of the medical attendant, as a matter of routine.

With a view to successful lactation the breasts should receive some attention. They should be relieved from injurious pressure by corsets and tight clothing early in the pregnancy; no other care except cleanliness is necessary until after the seventh month when it is advisable to begin to prepare the nipple. The old-time custom of applying a decoction of green tea and brandy in equal parts is familiar to all, and doubtless this mixture is very efficacious in toughening the nipple: I have found, however, that absolute alcohol, diluted one-half with water, is quite as satisfactory and less troublesome. I am accustomed to advise the use of this lotion morning and evening during the last two months. If the nipple is flat or inverted, it is well to draw it out by gentle suction with heated bottle before applying the alcohol. With proper preparation in pregnancy and suitable care during lactation, sore nipples need rarely occur.

As the abdomen enlarges in the later months, and the skin is tightly stretched, much comfort is imparted by anunction with sweet oil or lanoline. I have thought, too, that the skin is thereby softened and made more elastic, and that there is not so much tearing in the deeper layer and consequently not so much disfigurement by scars. Some women are oppressed

with the weight of the uterine tumor and are unable to go about with comfort: a well-adjusted abdominal support is a great comfort in such cases, and often enables the woman to walk and drive until she is brought to bed.

It is well known that a species of anæmia is a physiological condition in pregnancy: the red corpuscles, albumen, iron, and the salts of the blood are diminished; while the white corpuscles, fibrin, and water are increased. Robust, well-nourished women may have sufficient reserve power to sustain the demands which pregnancy makes upon their vital energy without artificial assistance; but this type of women is not common in my experience. I have already spoken of the importance of careful attention to nutrition during pregnancy, as a means of preventing undue impoverishment of the blood; and it has seemed to me that most women are benefited by the administration of iron, especially in the last two months. Apart from the general benefit of iron as a tonic, there is ground for belief that post-partum haemorrhage is less likely to occur in those whose blood has not been too much impoverished by the unsupported demands which pregnancy makes upon it. It has long been my custom to prescribe Quevenne's iron in the last two months of pregnancy, with great apparent benefit.

There remains for me to speak of one more subject of great importance to both patient and physician, the selection of the nurse. Too often this duty is attended to by the patient without consultation with her medical adviser; such, indeed, is the custom. While some men may be indifferent, most physicians would prefer to select the nurse who is to be their lieutenant and assistant, as much as the commanding officer to choose his adjutant, as indeed it is his prerogative to do. It is only right that he who is to have the responsibility of the case should select or approve the nurse who is to carry out his orders: no man can do his best work, if handicapped with an assistant in whom he has not confidence. There is need, I think, of some educational work on this point among the laity: women engage their nurse long before their physician, and without consultation with him, because they have not a correct understanding of the relation of the nurse to the physician. In most cases when the patient's means allow her to employ a training-school graduate, the nurse may be entirely satisfactory to the physician; yet it is unnecessary for me to assert in this presence that there is room for choice among trained nurses. And when we pass without this circle to the greater field of the old-time monthly nurse, we find them good, bad or indifferent, septic or otherwise, according to circumstances. I have long since declined to attend cases unless I could select, or approve of, the nurse, and my own results and peace of mind have greatly benefited thereby: it is needless to add that the patient's welfare is promoted, quite as much as the physician's, by thus allowing the doctor to give his patient the benefit of his own better knowledge as to the relative fitness of nurses. He surely can choose more wisely than his patient.

I hope it will not be supposed, from the length of this paper, that under ordinary circumstances much time or money must be spent in the exercise of suitable supervision over pregnancy. When the woman is in good general health two or three interviews with her physician will usually suffice: at these consultations, distributed through the pregnancy, all needed advice

can be given, and the physician can assure himself that his patient continues well. If, however, at any time the pregnant woman is not well, it is needless for me to emphasize the importance of bringing her as near as possible to normal standards.

It has often seemed to me that the physician's visits came at the wrong time: in most cases he does not see the patient during pregnancy, when he might be of great service, but makes numerous visits during the lying-in period which ought to be for the most part unnecessary. If the patient approaches her labor in good physical condition, in the best possible physical strength and with stable nerves, — if then the labor is skilfully conducted and she is delivered without septic infection and left in the hands of a competent nurse, there is little or nothing to require the subsequent attention of the physician: his care and advice can be much more profitably bestowed before the baby is born. If the physician's visits could be transferred in part from the puerperal to the pregnant period, there would be in my opinion fewer abnormal labors, less suffering, more rapid convalescence and better obstetric results.

How can this desirable state of things be brought about? How can the two chief obstacles be removed? Ignorance of the advantages of supervision among the laity can only be removed by active missionary work by the medical profession: when it comes to be understood in any community that the leading physicians will not attend obstetric cases unless women place themselves under observation early in their pregnancy, the lesson will soon be learned. Already among the more enlightened and well-to-do classes of this community, it is quite generally the custom for women to inform their physician as soon as they have passed over one or two periods and to place themselves in his care. And among those less well-circumstanced the lesson could soon be taught by well-directed effort in the circle of each physician's influence. The question of expense ought not to be an obstacle in the way of all necessary supervision of the pregnant: it is not, among those peculiarly well situated. Indeed, it has seemed to me that less expense is incurred on the average when the patient has received adequate attention during pregnancy, for the reason that fewer visits are necessary during the puerperal period. Among those who by force of circumstances or by custom are attended by contract, where the physician's services must be unrequited, if given during pregnancy, selfish motives alone would seem sufficient to induce him to give all needed attention to prevent complications and disasters which more or less affect his reputation, often give him much additional work and disturb his peace of mind. But appeals to such motives are unworthy of a liberal profession: the true physician is ever willing to give freely of his time and ability to promote the best interests of those who are placed in his care.

A NOVEL OFFENCE AGAINST A PHYSICIAN. — A recent number of *Vratch* quotes a statement to the effect that a St. Petersburg physician was about to prosecute a man who had caused one of the physician's prescriptions for his deceased wife to be posted over her grave, in order to call public attention to his belief that the medicine she had taken had been the cause of her death.

THE ESTABLISHMENT OF SANITARIA FOR PULMONARY DISEASES IN THE VICINITY OF OUR GREAT CITIES.¹

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The treatment of pulmonary diseases in sanatoria established for the purpose, has been for a number of years a well-recognized method in Europe, especially in Germany, and, during the past few years, the foundation and success of institutions in various parts of the United States, shows that the hopes of those who originated the idea were not vain, and that much more can be done now than heretofore in combating the ravages of consumption.

To Hermann Brehmer should be given the credit of having established the first institution of the sort, about thirty-two years ago, in Görbersdorf, a little village of Silesia, situated in a well-sheltered mountain valley about 1,600 feet above the level of the sea, where phthisis was never known to arise, and where Brehmer himself recovered his health.

He conceived the idea of establishing there an institution to be devoted to the treatment of pulmonary diseases only, and although ridiculed and maligned to an outrageous degree at first by members of his own profession, he finally proved that his views were correct and his name and memory now are honored throughout Germany and elsewhere in the medical world.

Since then, and upon the same principle, the famous sanatorium at Falkenstein, in the Taunus Mountains near Frankfort-on-the-Main was established under the care of Dettweiler, and later, many smaller institutions have sprung up in various parts of Germany, all devoted to the same purpose, and although varying perhaps in details of treatment, they carry out the same general idea that good food, fresh air and strict supervision to prevent the results of indiscretion, in diet and mode of life, are the chief factors in restoring the patients to health. Under these methods both Brehmer and Dettweiler claim that fifty per cent. of the incipient cases of pulmonary disease have been cured.

It was my good fortune in the summer of 1889 to see both of the above-mentioned sanitaria, and I can testify to the great care and pains shown by those in charge of the institutions. Brehmer's sanatorium at Görbersdorf, is a lasting monument to a noble man. Beginning as a small cottage for two or three patients, a little over thirty years ago, the institution now comprises two immense red-brick, Gothic buildings, with accommodations for two hundred or more patients; a large winter garden, reading-rooms, etc., in addition to various small villas scattered about the grounds for wealthier patients. Beautiful gardens surround the houses and a magnificently wooded park with carefully graded paths extending for many hundreds of acres over the sides of the mountains, forms a delightful pleasure-ground for the use of the patients.

In both of these institutions the strictest watch is kept over the general treatment of the patients, in regard to diet, amount and kind of exercise, and methods of life generally. At Görbersdorf, after a light and early breakfast consisting of a cup of tea, coffee or

¹ Read before the Section for Clinical Medicine, Pathology and Hygiene of the Massachusetts Medical Society, Suffolk District Medical Society, December 16, 1891.

milk, with bread and butter, exercise in the open air is prescribed and regulated according to the ability or disability of the patient. When the patient's strength admits of it, a walk up the mountain-side through the park is advised. To facilitate this, paths are laid out with the greatest care at a very gentle grade, seats being provided at many points, and the patients are told to stop and rest frequently to avoid undue fatigue, and at the same time to enable them to get the benefit of increased expansion of the chest and quickened circulation, so important in cases of pulmonary disease. Even in the height of winter is this made possible, as the paths are cleared of snow every morning by eight o'clock, up to the top of the mountain.

About eleven o'clock a more substantial breakfast is served, dinner at two, and supper about half-past six, the intervening time being occupied by exercise or rest in the open air, the patients even in the coldest weather, well wrapped up, reclining in chairs for hours during the day.

The moral welfare of the patients is cared for also, and frequent concerts, readings, games and other forms of amusement make an important feature of the treatment.

The same general methods are carried out at Falkenstein, and although the institution has not yet reached the magnificent condition of Görbersdorf, everything is done for the comfort and welfare of the patients.

It is a significant fact in favor of sanitarium treatment, that although the climate of Görbersdorf differs decidedly from that of Falkenstein, yet the favorable results are about the same in both places. In Görbersdorf they are blessed with infinitely more sunshine than in Falkenstein, which although situated at about the same altitude as Görbersdorf, and on the sheltered weather of a German winter.

Opinions differ at present as to the effects of altitudes *per se* in their beneficial effect upon pulmonary disease; some observers maintaining that it is one of the most, if not the most important factor in the large percentage of cases of recovery reported in regions over 1,500 feet above the level of the sea.

Brehmer himself remarked to me that he believed the altitude of Görbersdorf (about 1,600 feet above the level of the sea) had much to do with his success. Dettweiler, on the other hand, deemed it of much less consequence than other factors. Observers like Solly, Fisk and Denison, in Colorado, are firm in their belief that the altitude of Colorado (over 6,000 feet) is one of the chief reasons of the benefit obtained by the life there, while Dr. Geddings, of Aiken, S. C., whose large experience makes his opinion of much weight, is evidently of the same opinion as Dettweiler.

A discussion upon this point would be of great interest, but it is out of the limits of this paper, as I only wish to speak of the plan of establishing sanitaria for pulmonary diseases in the immediate vicinity of our great cities, in healthy localities, for the benefit of those who can not, or will not, for various reasons, seek more salubrious climates.

The late Dr. Paul Kretschmar, of Brooklyn, N. Y., two or three years before his death, read papers before the American Climatological Association, and before the local New York societies, strongly urging the establishment of such an institution in the hilly portion of New Jersey, near New York, but so far as

I know, no active steps have been taken towards carrying out Dr. Kretschmar's excellent idea.

Very early in my practice I felt that some such institution was needed near Boston, and as the idea grew stronger, I was enabled, with the assistance of Dr. Lovett, to establish, through the generosity of wealthy people here and elsewhere, a small Sanitarium at Sharon, Mass., on the Providence Railroad, a region long known as one of the most healthy localities about here, on account of its gravelly porous soil, its abundance of woodland, and pure water-supply, my idea being to supply to people of very limited means a comfortable home where at the same time a constant medical supervision could be maintained.

The institution was opened last February, and although it is, of course, much too early to give actual results, yet the evidences of the advantage over this method to that of sending patients hap-hazard out into the country to board, are so strong, that I am already convinced that I was not wrong in my first belief that a properly regulated sanitarium would be of the greatest use in our community.

A brief description of the sanitarium will be in place here.

The place selected was a small farm on high land not far from the Sharon station, overlooking a charming view towards the south and west. The soil is gravelly, very porous and dry, well-water not being found above twenty or thirty feet below the surface. Behind the house stretches from east to west a number of acres of woodland, chiefly of pine and hard-wood trees, which, with the line of the Moose hills, form an effective shelter from the harshest winter winds. On three sides of the house extends a broad piazza, in the centre of which, in a recess made on the southern front, the patients can be well protected, even in severely cold weather, when exercising or resting in the open air. The interior of the house is arranged to have as much sunshine and good ventilation as possible; open fireplaces are found in every room, and each patient has her own separate bedroom, no two ever sleeping in the same apartment. The walls are all painted, and are frequently wiped with damp cloths; the floors are of hard-wood covered with rugs, which are frequently cleansed, no laid carpets being allowed. The strictest rules are made as to the sputa of the patients. Cuspidors filled with damp sawdust are on the ground floor, and the contents are burned every day. In the bedrooms small paper cups in frames are at the bedside, and burned after use. When on the grounds the patients carry cloths placed in a rubber pouch in the pocket, the rags being destroyed in the same manner, and the patients are forbidden to expectorate on the grounds or to use any other receptacle than those provided, every effort being made to insure the utmost cleanliness.

The treatment usually pursued is first, that of giving all the good nourishing food possible at the three daily meals, a lunch of milk or raw eggs being taken in the middle of the forenoon and afternoon. Accordinging to the nature of the case, more or less exercise in the open air is taken, and daily rest in reclining chairs on the piazza, even in midwinter, when the sun shines, is one of the most important parts of the treatment, especially in hemorrhagic cases, in which much active exercise either on rising or level ground, is prohibited.

In most of the cases, I have found the tri-weekly or

daily use of the pneumatic cabinet to be of very marked benefit where expansion of the chest is needed, combining it oftentimes with some soothing vapor in cases where symptoms of bronchial irritation are marked. It is in such institutions that this instrument or other methods for expanding the chest and inhaling medicated vapors, can be used with the most beneficial effect, for the patient has the advantage of being near at hand, and can easily take the treatment as often as thought necessary. Judging by the effect in most cases at the sanitarium I regard the pneumatic cabinet as one of the most valuable factors in the general treatment. Tonics are usually given; stimulants occasionally when necessary, but drugs are avoided as far as possible. Everything is done to contribute to the mental welfare of the patients, and drives through the country and both out-door and in-door games are encouraged.

The institution only receives women now, and only cases which are in the first stages of pulmonary disease. We hope, as the project grows, to have cottages built adjoining the present house and to receive both sexes.

The objection has been frequently raised by some, that the effect of putting many patients together is to increase the risks of possible infection, and that the effect upon the patient of seeing others ill about him, will be very depressing and hence deleterious.

That both of these objections have a certain amount of truth in them no one can deny, but that practically, they amount to very little, to those who have had experience in sanitaria, I am convinced.

Before the Sharon Sanitarium was begun, I felt very strongly the force of the latter objection, and one of my first questions to Dr. Trudeau, when I visited his sanitarium at Saranac, N. Y., was, "Do not the patients become depressed by seeing each other ill?" In reply he said, "Listen to that!" and at that moment the sound of some negro songs and very jolly laughter came from a group of patients on the piazza near by, and he added, "That is the way it is all the time. Of course, there are times when each one feels depressed, especially at first, but they usually become accustomed to their surroundings, and if they improve, seem as happy as possible." This was quite in keeping with the sentiments expressed at the large institution at Görbersdorf, by a young American lady who had been there for two years, when I asked her if she never felt depressed at being in a place where there were so many sick people. She laughed and said, "Oh, for the first two weeks I came, I was homesick and of course I felt depressed, but I soon got over that and ceased to think of it, and I am so happy here now I hate to think of leaving, as Dr. Brehmer tells me I probably can in a few months"; and she told me that was the feeling with the majority. My own experience with the patients at Sharon only confirms this idea. They seem very happy; and when depression comes I usually find it attributable to some outside cause and not to the proximity to other patients.

As to the possibility of infection; with proper care I think this danger is reduced to a minimum. No one would deny that the ideal way would be for each patient to have his or her own establishment with a physician in constant attendance to regulate the daily mode of life in the most perfect climate to be found; but as this method is unfortunately impossible for the large majority of sufferers, a less expensive course

must be adopted, and my own belief is that the advantages of the method of treatment I am advocating so far outweigh its possible dangers that the latter practically fade into insignificance.

Dr. S. E. Solly of Colorado Springs, in an admirable paper entitled "Comparative Results of Treatment of Phthisis by Climate,"² gives the conclusions of several of the most celebrated authorities upon pulmonary diseases in Europe and America and by them gives a very convincing proof of the great advantages of treatment in closed resorts (sanitaria) as compared with that in open resorts. In Table III, entitled "Comparison Between Open Resorts and Sanitariums in Low Climates," he gives the following striking figures:

ALL STAGES OF THE DISEASE.

	Cases.	Cured.	Benefited.
Open Resorts in Low Climates,	1,724	4%	46%
Sanitariums in Low Climates,	2,443	13%	27½%

FIRST STAGES OF THE DISEASE.

Open Resorts in Low Climates,	685	5%	46%
Sanitariums in Low Climates,	89	31½%	45%

In thus advocating the establishment of sanitaria in healthy towns near our large cities I do not wish it to be understood that I expect such results as are obtained in climates more salubrious and less trying than our own; but I firmly believe and am daily becoming more convinced from results thus far obtained at Sharon that we can do infinitely more than heretofore to help a large class of patients who are unable for various reasons to seek other climates.

THE ETIOLOGY OF ACUTE PLEURISY WITH EFFUSION.¹

BY GEORGE G. SEARS, M.D.

Or the five cases which are here briefly reported, I have been very kindly allowed to refer to the Records of the Massachusetts General Hospital for the early history of three; while this list could have been easily extended, the five which have been selected illustrate sufficiently the more recent views of the etiology of acute pleurisy with effusion, to serve as a text for its discussion.

Mrs. J. M., aged thirty-six, family history good. In May, 1890, had an attack of pleurisy with large serous effusion for which she was twice aspirated. Nine months previously she had overtaxed herself by nursing a sister-in-law who was in the last stages of consumption and since then had had, at times, a short hacking cough of which she had thought nothing. She recovered sufficiently to perform her household duties, but died a year later of phthisis.

M. H., aged twenty-one, family history unknown, had an attack of pleurisy with effusion, requiring aspiration, in the spring of 1888, from which he entirely recovered and resumed work. In September of the following year, phthisical consolidation of both apices was found.

M. B., aged twenty-one, of good family history, entered the Massachusetts General Hospital in June, 1876, with an effusion completely filling the left side

¹ Read before the Boston Society for Medical Improvement, December 24, 1891.

² Hare's System of Therapeutics, Vol. 1. H. C. Lea & Sons, Philadelphia.

which he attributed to a strain. Six weeks later he was discharged well and resumed his work, that of a stevedore. Six years later he died of phthisis after an illness of over a year.

S. V., aged fifteen, entered the hospital in 1885 with a slight effusion into the left chest following exposure to cold. He had had a slight attack of pleurisy the previous winter. After three weeks he was discharged well, but died four years later of consumption in California, where he had been sent for his health.

Annie L., aged twenty-two, entered the hospital in 1890. Three years before she had had pleurisy with effusion for which she was aspirated. At the time of entrance well-marked signs of phthisis were found in the lungs and she was suffering also from ascites which was ascribed to a tubercular peritonitis. Five weeks later she was so much improved that she was discharged. When she again came under observation, six months later, the pulmonary lesion had advanced and bacilli were found in the sputum, but abdominal examination was negative.

With the exception perhaps of the first case, where the possibility of infection or contagion at an earlier date cannot be excluded, the disease came on suddenly in previously healthy individuals, some of whom were without hereditary taint, ran an acute course and ended in apparent recovery, the patients resuming their ordinary occupations. Later, at periods varying from a few months to a few years, phthisis manifested itself. It is to be regretted that the tubercular or non-tubercular character of the process cannot be definitely settled by an examination for bacilli as in other diseases in which such a suspicion exists, but they have been unsuccessfully sought for with the microscope by Ehrlich, Fraenkel and others in some cases of undoubtedly tubercular origin, while inoculation and culture experiments have proven equally fallacious. Direct evidence is not, however, altogether wanting that primary tubercular inflammation of the pleura may exist. Vaillard's and Kelsch's² cases are very strongly corroborative, but are not quoted here as objection has been made that the bacilli were not sought for. The same criticism cannot be made to two cases reported by Lauth³ in both of which the disease was similar to phthisis, but the autopsies showed tuberculosis of the pleura without previous involvement of the lungs. It cannot be considered positive proof of the tubercular origin of certain cases that they have been followed by consumption after the lapse of several months or years, nor, on the other hand, can its connection with tuberculosis be denied where complete and lasting recovery has taken place. The prognosis in all tubercular affections has been recently so thoroughly modified that cure is expected in a considerable proportion of cases. König, for example, found that out of 131 cases of tubercular peritonitis which he had collected, 30, or about 23 per cent., remained well from two to twenty-five years after laparotomy, and it seems still an open question if this has not shown, by proving the diagnosis, rather than that tubercular peritonitis can be recovered from, than that the operation is in itself always the cause of recovery.

If it could be shown that in a large number of cases a much greater proportion dies of tubercular disease than could be expected from the general average, strong presumptive evidence of the connection between

the two diseases would be furnished and the probability of the tubercular origin of pleurisy be strengthened. Such evidence I have endeavored to procure by collecting all the published series of cases of any considerable size which I could find in the literature of the subject. These have not been very numerous and are not free from several sources of error. Some of the reporters have made no distinction between dry pleurisy and pleurisy with effusion, or have included in their list cases which were secondary to pneumonia, measles or other infectious disease, as well as cases which were under observation too short a time. Such errors might, in a measure, balance each other, but Fiedler's⁴ figures, whose original paper I have not seen, are so one-sided that he would seem to have included cases in which the effusion occurred in an already well-established tuberculosis of the lung. A striking point in these statistics is the wide variation in the experience of the various observers. Blakiston reports 53 cases which had remained well for several years. Austin Flint, 47 cases with three possible instances of subsequent tuberculosis; out of 21 cases reported by J. P. Bramwell,⁵ three only died of tubercular disease. Corriveau⁶ had but four deaths from this cause out of 27 cases, one of whom he had followed twenty-five years and one fifteen. On the other hand, V. Y. Bowditch⁷ found in 90 cases occurring between 1849 and 1879, that 32 had become consumptive. Barr,⁸ out of 57 cases occurring between 1880 and 1884, found that 21 at the time of his report (1890) had already died of pleurisy or some well-recognized tubercular disease, mainly phthisis, and of 44 cases treated by Böcher, 32 presented later manifest symptoms of tuberculosis of the lungs. Fiedler, quoted by Sée, says that of 112 cases of pleurisy treated by thoracentesis, but 21 recovered; of the 91 other patients, 25 died of phthisis either at the hospital or their homes; 66 recovered from the pleurisy, but were found later to be victims of confirmed phthisis or other tubercular disease.

Four hundred and fifty-one cases are here mentioned of which 176, or about 39 per cent., developed phthisis or other well-marked tubercular affection. Coustan and Dubrulle,⁹ from their army experience, say that all soldiers who have suffered from pleurisy are no longer fit for military duty and that a majority die later of consumption. An exactly opposite opinion is held by Blachez who mentions an epidemic of pleurisy many years ago without the subsequent development of pulmonary disease in a single case. Westbrook, Vickery, and others have reported cases which were followed by phthisis and from a review of the recent literature there seems to be an increasing tendency to ascribe to the tubercle bacillus a more and more important rôle in the causation of pleural effusions, but as the pendulum of medical opinion is proverbial for the length of its vibrations, it is fair to ask if, in the present instance, it is not tending to swing too far in this direction. The frequent occurrence of pleurisy as a complication of pneumonia, rheumatism, measles and other infectious diseases where no doubt exists that it is the same in origin, suggests the question, if so-called idiopathic pleurisy may not at times be due to the same causes,

² Arch. de Physiol., 2, s. 7, 8, 1886.

³ Gaz. Hebdo. de Med. et de Chir., 1887, p. 649.

⁴ Centrbl. f. Chir., No. 35.

⁵ Edinb. Med. Jour., 1889, II, p. 360.

⁶ Journ. de Med. de Bordeaux, xvii, 1887-88, p. 601.

⁷ Philadelphia Medical News, July 20, 1889.

⁸ British Medical Journal, 1890, I, p. 1038.

⁹ Gaz. Hebdo. de Méd., 1886, 2, s. xxiii, 602.

which for some reason affect only the pleura, a question which the discovery of the pneumococcus in pleural effusions, not secondary to pneumonia, goes far toward answering, while the reported curative effect of salicylic acid in many cases suggests its being at times a local manifestation of rheumatism. From any series of cases similar to that given above, a certain number must be deducted for those who would have developed phthisis in the natural order of events without the incidence of a previous pleurisy, while the part which a latent tuberculosis of the bronchial lymph glands may take in the subsequent onset of a more general process must also be considered, as has recently been emphasized in papers by H. P. Loomis¹⁰ and Northrup.¹¹ Of 91 autopsies on tubercular patients collected by the latter from the records of the New York Foundling Asylum in which conclusions could be drawn as to the primary seat of the lesion, in 88 it was situated in the bronchial glands, which in nine cases had already advanced to a state of cheesy degeneration while the lungs showed only a beginning tuberculosis. In 13 cases, most of which had died from acute infectious diseases, they were alone affected. Loomis inoculated rabbits with material from the bronchial glands of 30 adults who had died either suddenly or after an acute disease and found that in eight cases active tubercle bacilli were present, although there were no other traces of tuberculosis. There can be no doubt that the unfortunate possessors of such glands are constantly exposed to the dangers of a general infection which may occur whenever proper conditions are found for dislodging the bacilli and setting them adrift in the general or pulmonary circulation. Such conditions would seem to be well satisfied in acute pleurisy with effusion where a shower of bacilli might be washed out by the large amount of fluid which, in process of absorption, must pass in part, at least, through the lymphatics. Ulceration of the degenerated glands might also be set up by the sudden increase in their functional activity. Such a theory would explain the onset of a general miliary tuberculosis following the rapid absorption of an effusion as in the cases reported by Litten, Troisier and others. In other cases where months may pass before phthisis is recognized, it is possible that the dislodged bacilli may remain quiescent or develop so slowly as to cause no special symptoms until some further impulse is given.

In conclusion it can be said that a very considerable proportion of cases of acute, apparently idiopathic pleurisy with effusion, is followed by pulmonary phthisis. In a part of such cases the pleurisy is doubtless of tubercular origin and is its earliest expression just as hemorrhage may be the first symptom and not the occasion of pulmonary phthisis, while of the cases which remain permanently well, in view of the spontaneous recovery of tuberculosis in other situations, it is fair to assume that a certain proportion is due to the same cause, the process remaining local. In others, though itself benign, pleurisy may be the cause of grave disease by dislodging the bacilli from their comparatively harmless position in the bronchial glands, or by crippling the movements of the lung favor the development of phthisis. Whatever may be the relative importance of these processes in inducing the same result, the deductions to be drawn as to treatment are sufficiently obvious and should lead to the

greatest care during convalescence to protect the patient so far as possible from danger by building up his powers of resistance, while the expansion of the lung should be aided by early, and if necessary, repeated aspiration. Equally obvious, for both prognosis and treatment, is the necessity for frequent, careful examination of the lungs themselves as well as a bacillary examination of the sputum, lest in the greater interest of watching the daily changes of the fluid the beginning of a more serious condition may be overlooked.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, December 28, 1891, the President, DR. FREDERICK I. KNIGHT, in the chair.

DR. C. M. GREEN read a paper on

THE CARE OF PREGNANT AND PUERPERAL WOMEN.¹

DR. REYNOLDS: I am very glad to hear this paper. I think the subject is one of the very greatest importance. I think it a very widespread belief that the sole duty of the obstetrician is confined to labor. I think myself that, in the great majority of cases, among the women of more delicate health of the upper classes of society, the care of pregnancy and the puerperium is, by all odds, the most important part of the obstetrician's duty, and has more to do with the after-health of the patient than anything he can do in ordinary labor, with the single exception of asepsis.

I think there is one thing that the physician in pregnancy should bear carefully in mind and that is the extent to which the normal annoyances of pregnancy are to be exaggerated by mental influences. It is very important that he should always bear in mind the fact that by too much attention, by appearing to attach too much importance to minor troubles, he may bring the patient to a state in which she imperatively demands treatment for things she had better endure. While he should bear that in mind carefully, and while it is often a difficult point to decide whether a given annoyance should be endured or be treated, I do think that the decision of this point properly and the treatment of the annoyances from the moment that they exceed the physiological limit conduces enormously to the health of the patient in succeeding years.

As regards the treatment of nausea and vomiting during pregnancy I have been especially impressed with the truth of what Dr. Green said about the importance of having something to eat before the patient rises from bed. I believe that the reason why the nausea of pregnancy is known as "morning sickness" is because that is the only time in the twenty-four hours that the patient has been twelve hours without food, and I think that, in the vast majority of cases if at the time when nausea first appears the patient takes a hearty supper just before she goes to bed, and a cup of milk before she rises in the morning, the nausea will be very mild even in cases where it might become severe without that precaution.

¹⁰ New York Medical Record, December 29, 1890.

¹¹ New York Medical Journal, February 21, 1891.

¹ See page 186 of the Journal.

Constipation is certainly one of the most important of all the derangements of pregnancy. I think nothing conduces more to comfort during the later months of pregnancy and prompt recovery after labor, than early treatment of constipation. If constipation is allowed to persist to the sixth, seventh or eighth month, very little can be done for it except the employment of cathartics, often in considerable doses and for long periods, and that use of cathartics, it seems to me, hardly relieves the system fairly. It prevents the worst effects of the accumulation of feces, but defecation can seldom at that period, with the fetus and uterus pressing upon the intestines, be made sufficiently regular and normal and physiological to relieve the patient from the evils which attend the minor degrees of constipation in ordinary health if an accumulation of feces has already been permitted to occur. I differ from Dr. Green a little in what I understood to be his advice in the employment of enemata. I believe it is a mistake to have the patient contract the habit of making frequent use of enemata, and I have failed to find that attention to diet will regulate the bowels. I have been rather accustomed to pin my faith to the fluid extract of cascara sagrada or the elixir rhamnus Pursh, Co., (N. F.) If the patient begins the use of one of these preparations, using them three times a day from early in the pregnancy, and carries it through to the end, I think the bowels almost always maintain a fairly normal action.

Another point of great importance is care to recommend the abundant use of water during the pregnancy. Nothing, I am convinced, adds more to the safety of the patient than that the physician should be careful to see that she takes a sufficient quantity of fluid of some kind; and I think that as Dr. Green has stated, most women so uniformly take too little water, that this is a point to speak of in almost every case.

As regards the mental condition of the patient, every one knows the delight which women who have had children have in detailing to primiparae the sufferings of labor. I think a point of great importance in the care of the latter months of pregnancy is for the physician to take care to draw his patient out, find out her ideas about labor, contradict some of these stories, and reassure her. I think this often has more effect on the *morale* of a patient, and on her general condition, than is ordinarily imagined. I think it is important to look after the nervous tone of the patient, to care for her sleep, to caution her to avoid anxiety, worry and mental work.

As regards pelvimetry, I agree with Dr. Green that the employment of pelvimetry in the ordinary run of cases is not only impossible, but entirely unnecessary from the obstetric point of view, for the reasons he gave. I think it is important to urge upon physicians to reach for the promontory of the sacrum at the first examination in every case of labor. If there is any contraction of the pelvis it will be detected then, and any degree that is so slight as to have escaped attention during pregnancy will thus be recognized at the beginning of labor, which is plenty soon enough to recognize minor degrees, and will prevent their neglect until serious complications have arisen.

I was a little surprised to hear what Dr. Green said about the care of inverted nipples. I should be afraid to habitually pull out inverted nipples for fear of reflex action upon the uterus.

DR. A. H. NICHOLS: While not venturing to add

anything to the subject of this paper, I can perhaps furnish another illustration of the physiological principle that while the danger of abortion from external violence is comparatively small during the greater part of the month, there does exist a very marked susceptibility to such an accident during or immediately before the menstrual epoch. I remember when a student in Paris to have been impressed by a seemingly exaggerated statement on this point made by Professor Depaut, that a pregnant woman could under ordinary circumstances jump from a second-story window with greater safety as regards an abortion, than she could slip from an edge-stone at this particular time of the month, when the reproductive organs are more easily excitable. An experience derived from more than twenty summers spent at a sea-side resort has convinced me that there exists a very imperfect knowledge of this law on the part of many physicians sending thither women patients; for pregnant women are, as a rule, not furnished with instructions as to the propriety of bathing in the ocean where very considerable shock may be sustained from the low temperature of the water or from the height of the waves. When consulted upon this matter, my advice has invariably been, that if the woman is otherwise in good health and the abdominal enlargement not extreme, sea-bathing can be indulged in with benefit under the simple restriction with regard to the menstrual epoch, as above indicated: and in no instance have I observed any ill-effects from such bathing where this rule was observed. On the other hand, I have witnessed several abortions and many threatened abortions in women who have subjected themselves to the violence of the surf indiscreetly and in violation of this rule. I am furthermore inclined to the belief that a more general application of the principle embodied in this law would permit much greater latitude to women in the way of general exercise, gymnastics, etc., than is now accorded; and it would certainly seem that the improved physical status thus induced would tend to facilitate the process of childbirth.

DR. H. W. BROUGHTON: I feel glad that my own habits seem to be so well in accord with the teachings of so good a teacher as Dr. Green. A case by way of illustration, as Dr. Nichols has set the example of practical experience, is suggested to my mind that shows the value of encouraging our patients to call upon us in the early months of pregnancy. Not long ago a woman called upon me with a view of consulting me about her little girl. I was impressed immediately with the pallor and extreme whiteness of her face, and asked her as to the occasion of it. I learned that she was three months' pregnant, and that led me to ask further questions. I found she was limiting her self to a strictly vegetable diet. I asked why that was done; and it seems she had read with great interest a book something after the general style of "Childbirth Made Easy," written by some very wise person who imagined that by an absolute vegetable diet the bones would be so softened that the fetal head would pass without pain. I found my patient was deeply imbued with the idea. She was a very intelligent woman. I saw that some tact would be necessary to disabuse her mind of the fallacy, and I ventured to remind her that a diet that would produce so marked an effect upon her own system as to soften the bones might produce a very serious effect upon the child. She would not want a child to have bones so soft as to be bow-legged,

and that idea seemed to take her. She went home, changed her diet, and in a few weeks she was in a very much better condition.

In regard to exercise. I should agree fully with Dr. Green as to the desirability of exercise, but the matter of gymnastic exercise has seemed to me to require careful instructions and caution on our part. I do not know whether there is any foundation to the popular notion that reaching the hands above the head is likely to cause the cord to encircle the neck. I should like to ask Dr. Green his opinion upon that point. In a general way I think gymnastic exercises should be somewhat restricted, to say the least.

There is one other matter which is perhaps trivial, and yet has been observed in the history of the Roman empire. It was the custom among the wealthy Romans to surround their pregnant wives with the most beautiful pictures and statuary so that the mother might be likely to produce beautiful offspring. I question how much direct influence such habits would have, and yet I think it would be well for a mother to accustom herself to viewing those things which are beautiful and which delight her mind to the end that the child may be comely. I know of many women who habitually during the months of pregnancy make it a point to look at pretty babies and at pretty little children and study to surround themselves with such things as appeal to their eye. I am not sure that it is an unpractical thought.

In the latter months of pregnancy iron is usually prescribed. I have been apt to use the German preparation as being less constipating.

With regard to the nipples, I have not observed any bad results from the custom of using the hot bottle, but have invariably instructed the patient to draw the nipple out with her fingers, and apply an astringent lotion, as Dr. Green suggests.

DR. C. W. TOWNSEND: My attention has been forcibly called recently to the importance of examining the urine. I think most of the cases of eclampsia are in women who have not been seen at all before the time of the eclampsia or until the immediate symptoms of eclampsia came on. I saw a patient of that sort the other night and it seemed to me if this patient had been seen a month before and the urine examined and proper treatment instituted the eclampsia could have been prevented, and the patient could have gone on to full term instead of requiring manual dilatation and version at the seventh month.

DR. H. F. VICKERY: I came with great interest to hear Dr. Green's paper, and was disappointed he did not have time to speak of the period after delivery. I hope he will in the second volume.

What Dr. Townsend just said reminds me of a most impressive incident. A physician was engaged by a bride to attend her in her confinement, and she was very anxious that he should not come near the house until pregnancy ended. When he was sent for, she was dying of eclampsia from renal trouble. It is a case which he regretted very much, although it was not his fault at all.

It seems to me that where albumen is found in many cases, it is not of any significance, because it is not associated with renal inflammation. I should always search for casts. In those cases where I have found casts I have always had trouble so far as I recollect now. I think, beside the other ways of determining whether there was danger, the microscope should be used.

I have just been obliged to draw the water of a woman recently delivered, for a week, and I read a suggestion this morning which dropped into a thirsty mind. I do not know whether any other gentleman has tried it; but this writer suggested that for some time before delivery a pregnant woman should be requested to practise making water on the bed-pans. I shall certainly request my nurses to ask their patients to do it. I would like to ask Dr. Green if he has had any experience about that.

DR. O. K. NEWELL: I have listened to this paper with great interest. It seems to me there is one important point in the management of pregnant women, and that is the determination by care and treatment of one kind or another whether or not the mother will be able to nurse her children. One outcome of civilization seems to be that women living under its influences tend to lose the ability to nurse children. Whether that is due to one cause or another is not for me to say; but it seems to me it is one very important aspect of child-bearing in this day and generation.

DR. J. C. MUNRO: Dr. Green spoke of giving Quevenne's iron. I think it may not be generally known that when Quevenne's iron is written for, the druggists are liable to give some inferior substitute, which is not so easily absorbed. In pregnancy and other conditions it is even more easily assimilated by combining with Vallet's mass. In the matter of cathartics Dr. Reynolds spoke of a number of the buckthorn bark preparations. I have used pretty steadily for three years the rhamnus frangula bark. Patients chew and swallow a piece of the bark as big as the finger-nail three or four times a day, gradually diminishing the dose. It is more efficacious than any cathartic preparation I have ever seen, especially among pregnant women or those chronically constipated. It is a drug not much used, because it is not expensive and not fashionable; but if physicians are careful to get the pure bark I think they will find it more useful than any preparation.

DR. GREEN: In regard to the preparatory treatment of flat or inverted nipples, I have never known harm to follow the careful use of the hot bottle. I doubt if the reflex irritation is sufficient to excite uterine contractions.

As regards the mental and nervous condition of pregnant women, it is of course important that in our efforts to guide women into ways of hygienic living we should not make them unduly mindful of trivial ailments nor excite their nervous apprehensions. My effort is to take the woman's mind entirely away from her pregnancy. To this end I advise against reading books which treat of pregnancy and labor; I inform patients, as far as is found necessary, of such things as it is well for them to know, and only ask them to follow the laws of correct living, and then notify me if anything goes wrong with them.

The practice suggested by Dr. Vickery of training women to pass their urine lying on their back was originally proposed by Skutsch. I have never followed this plan, and doubt the wisdom of it. It is well to remember that some women, who cannot pass water lying on their back, can do so by resting on the hands and knees. Most women in the lower classes sit up on a chamber-vessel to urinate, and in spite of tradition to the contrary, I am not sure that such a procedure is harmful, unless there is much weakness, a torn perineum, or organic disease of the heart.

DR. G. G. SEARS read a paper on
THE ETIOLOGY OF ACUTE PLEURAL EFFUSIONS.²

DR. F. MINOT: I should agree with the reader as to the necessity for making careful observation of a patient with acute pleurisy for a long time afterward; but I think the question of the effect of simple pleurisy in producing pulmonary tuberculosis at a later period is one that it is almost impossible to determine at the present time, since tuberculosis of the lung is the most frequent of all diseases, causing about one-seventh of all deaths. There is no question, of course, that a very large number of cases of acute pleurisy recover completely, the patient living a long time, and never showing symptoms of tuberculosis. The frequency of pulmonary tuberculosis makes it very possible that a former pleuritic patient should be attacked with it, as well as anybody else; but I do not think the true connection between the two is so far established by statistics as to make it very probable. Undoubtedly there are some cases in which pleurisy with effusion is primarily tuberculous. In other cases the patients may have had latent pulmonary tuberculosis, and a small tubercular cavity might break into the pleural cavity, and the bacilli gain admission in that way; in others, through the lymphatics or blood-vessels. A practical point is the importance of early aspiration of the chest in all cases of serous effusion, on the bare supposition that the pressure upon the lung might develop the disease latent there in the lymphatic glands.

DR. VICKERY: I have been much interested in this paper, and I have little to add. There is one thing,—a lung which has been allowed to retrace by the presence of a large effusion is not favored with such iteration as in normal circumstances, and affords a good nidus for any bacilli that come along. I suppose we all breathe tubercle bacilli more or less into our lungs, and they are overcome there by the cells; and in the disabled lung the danger is greater than in the healthy lung. So, whatever our views may be as to this yet unsettled point, there can be no question in my mind that the care of a person who has had acute pleurisy with effusion should be very great in hygienic measures to protect him against tuberculosis. A good many of those gentlemen who have seen favorable results follow acute pleurisy have patients in such circles of society with so much intelligence and wealth that they are more apt to get well even if they have tuberculosis. I think that is one reason why Dr. H. I. Bowditch entertained so favorable a view of pleurisy with effusion, and why a good many country doctors are very much surprised that there is any such discussion going on. Their cases are in the open air, and one or two bacilli do not make much difference. The tissues and the oxygen in the air overcome them.

DR. H. JACKSON: I think it is a most difficult matter to prove one way or the other, but clinically it seems to me very difficult to believe that ordinary simple pleuritic effusion is due to the invasion of tubercle bacilli. Tuberculosis of the pleura and of the peritoneum is not very rare, and when it does exist there is some anatomical lesion of the surface. Most authorities consider bloody effusion usually points to the presence of tuberculosis as a cause; also, as seen in the lower animals, miliary tuberculosis of the peritoneal cavity is very apt to cause a slightly bloody fluid, and the pleura is thickly studded with military

tubercles. I think, if we assume that tuberculosis is the cause of ordinary pleurisy, we must at the same time assume that it causes that effusion without giving rise to any anatomical lesions of tuberculosis, that is, to the presence of miliary tubercles or of new formed tissue. That, I myself am not prepared to believe. I do not believe tubercle bacilli will cause effusion without some anatomical lesion in the pleural surface.

DR. VICKERY: I think that tubercle bacilli have been seen in the false membranes following pleurisy with effusion, on section. Perhaps it is just chance that they were there.

DR. JACKSON: I did not know of their being found in that particular way.

DR. F. I. KNIGHT: There seems to be a general feeling of uncertainty in regard to the matter, in which I share. It is one of those questions which I feel is still under judgment. Certainly I have seen a good many cases of complete recovery from pleuritic effusion, and I have also seen a good many cases where I could not but feel that the invasion of bacilli and subsequent disease was induced by the crippled condition of lung by long exposure to pressure, and I should certainly like to emphasize the point Dr. Minot has made, that that is one great reason for early interference. If the effusion remains any great length of time, more than four or five weeks, we almost never see complete recovery. There is a decided want of expansion left, which seems to me to be always an invitation, as it were, to other pathological processes.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

REGULAR meeting, December 16, 1891.

DR. V. Y. BOWDITCH read a paper on

THE ESTABLISHMENT OF SANITARIUM FOR PULMONARY CASES IN THE IMMEDIATE VICINITY OF OUR GREAT CITIES.¹

DR. MASON: I am sure that Dr. Bowditch's sanitarium will be of the greatest possible service, especially when its scope is increased through larger means, so that more patients can be received, and when it can be made available for men. At present there is the greatest difficulty in Boston in having a male phthisical subject in the early stages taken care of for a long time. They come to our out-patient departments and wards for a few weeks and then disappear. They are not able to pay a large amount of money for their support, therefore they generally go rapidly from bad to worse. The women have a better chance in small homes for that purpose. I do not think a large number recover in the small city establishments. I hope the time will not be long before Dr. Bowditch's sanitarium will be able to receive at least a few men such as present themselves every week at our hospitals and have to be turned away without much hope of benefit.

DR. OSGOOD: One factor of Dr. Bowditch's sanitarium, which I am very glad has been opened, I wish to endorse strongly, and that is the separation of his

² See page 192 of the Journal.

¹ See page 150 of the Journal.

patients. This plan recalls to me an interesting visit which I made ten or twelve years ago at the Hospital for Consumptives in Ventnor, Isle of Wight. For, at this institution, consumption was treated upon what was called, the "separate system." At the time this hospital was opened the bacillus of consumption, of course, was unknown, and undoubtedly the separate plan of treatment adopted resulted simply from the observation of physicians, namely, that consumption, if not contagious, presented a good many strange coincidences in cases where persons who took care of the consumptives themselves were attacked by the disease. However that may be, the Ventnor plan, so far as I know, was in advance of any treatment of consumption that is in general use to-day, and I would like to ask Dr. Bowditch if his sanitarium is not the only one in the country in which patients are treated on the separate system, which, of course, is the only one to be used in this disease.

DR. BOWDITCH: I cannot say positively. I know of Dr. Trudeau's sanitarium at Saranac. He never has more than two patients in a room, and most of them have separate sleeping apartments.

DR. OSGOOD: In the Ventnor Hospital, by means of charitable donations, every patient, even the poorest, has his private room. I am quite able to sympathize with Dr. Bowditch's new project, because, being connected with the Home for Incurables, I am fairly pestered by people who demand entrance for consumptives into the Home. Our regulations refuse admission to such cases. It seems to me there is no question as to the great need of such retreats for consumptives among the poor and I hope Dr. Bowditch's sanitarium will become rapidly enlarged.

DR. KNIGHT: I think there can be no question in the mind of any one who has had to deal with pulmonary disease, tuberculosis particularly, that it is one that requires such constant care and supervision that it can be afforded much better in an institution than out of it, it being not the disease which has to be treated at present, but the condition of the patient, and the factors are so many which have to be regarded in improving the condition of the patient and enabling him to withstand the disease and bring about its ultimate arrest, that it is only the most constant care which brings about in the majority of cases the successful result, and there is no question that the results are better in sanitaria than outside of them. Of course the sanitaria in health-resorts like Colorado are going to show better results as a rule. There are two in Colorado Springs and it is fair to suppose that their results are going to be somewhat better at any rate than sanitaria in our own neighborhood, but the constant care which they get in the sanitaria here is going to be productive of excellent results.

The first time that this subject was brought to my mind very forcibly that hospital treatment was good for consumption was when I was in Bellevue temporarily serving with the elder Flint. He said one day "Did you ever notice how well these consumptives do in the hospital although our diet is poor and you would suppose in the crowded condition of our wards that they would not do particularly well, but you notice how well they are doing, and they are not having any medicine. You see what the regulation of their life will do for them?" This was true, so far that the majority of consumptives who came in all stages, improved from the judicious regulation of their

diet and habits of life. Now it is perfectly well known that a patient will undo in one day's over-exercise, all that you have done for him in six months. That is not likely to happen in the sanitarium, neither are they likely to be upset in the thousand and one ways that their relatives and friends at home offer them. That is one advantage, being free from the constant meddling and annoyance of friends.

Then the association of patients with the same disease curiously enough leads them to feel very differently in regard to it. They talk over their symptoms, expectoration, consolidation and bacilli just as we talk about matters of medicine, with no more feeling really than we have.

The other day when I was at Sharon, I was asked to drive down to the station with an attractive young lady. She had been discharged at the end of a week's residence. She was supposed to have serious disease, but upon careful examination it was found that she did not have tubercular disease at all. I imagined she would rejoice at getting away from all those people, but, on the other hand, she was mourning that she could not stay. She said it was a delightful place and she would like to have staid several months, so that the impression made on her mind in a week's time was only a pleasant one.

DR. BOWDITCH, in closing, stated the present capacity of his sanitarium was for nine women. Incipient cases were especially desired, since they offered better prospects of cure. It was not a hospital. All the patients were up and about and able to take walks. They were not obliged to lie in bed unless something occurred which made it desirable to remain in bed for a day or two. There was no provision for free patients at present. The price of board for each patient was five dollars per week.

Recent Literature.

Manual of Chemistry. By W. SIMON, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons. Third edition, thoroughly revised. With forty-four illustrations and seven colored plates. Philadelphia: Lea Brothers & Co. 1891.

An earlier edition of this manual has been reviewed in these columns, and it is unnecessary therefore to give this one an extended notice. The book has been prepared specially for the use of students of medicine and pharmacy, and includes descriptive chemistry, qualitative analysis, and physiological chemistry. It is, of course, impossible to do full justice to these three branches of chemistry in a book of the size of this one and it is not surprising that many subjects have failed to receive, at the hands of the author, the attention that their importance demands. In spite, however, of some deficiencies of this kind the book is better than many of the works on chemistry which have been thrown upon the world during the past few years, and will doubtless be found useful in connection with lectures and laboratory demonstrations covering the same ground. As a text-book or book of reference for students in general, we do not see that it supplies any present want.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, FEBRUARY 25, 1892.

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these results are quantitative and simply show the absorption of very minute quantities of the iodide and it is still difficult for any one but a therapeutic enthusiast to look with much favor upon this kind of medication, so far as the action of the drug itself is concerned.

The article of Peters led Paschkis and Obermayer¹ to publish a brief statement of some positive results obtained by them. They used the oleate of lithium made into an ointment with lanolin. This metal was chosen on account of the ease with which small quantities may be detected by the spectroscope. The ointment was rubbed into the skin of the back of one of the experimenters on two occasions and once a hairless African dog was exposed to the spray of a five per cent. solution of the chloride of the same metal. In each of these cases lithium could be detected in the urine, but the quantity was exceedingly small, enough so to make any therapist sceptical.

ABSORPTION OF DRUGS BY THE SKIN.

THE old question of the absorption of drugs through an intact epidermis has been revived by Peters¹ who seems to have thrown a new light upon the subject. Almost all carefully conducted experiments (for example, Röhrlig, 1872, Fleischer, 1877, Yuhl, 1884, Riker, 1886) have shown that when ointments containing potassium iodide are rubbed into a sound skin, none of the KI is absorbed. This drug has been usually selected, not on account of its harmlessness, but chiefly because of the ease with which very small amounts may be detected in the secretions. When any iodine was found in the urine, as did sometimes occur, it was thought, in view of its infrequency, that an absorption had occurred by means of a mucous membrane (vapors of the material used) or that a skin abrasion had been overlooked. Rózsahegyi,² on the other hand, had maintained that the skin could absorb small amounts of the iodide, but believed the amount too small to be of therapeutic significance. He also pointed out that for the detection of small quantities of iodine, the liquids in question should be evaporated and then carefully extracted with alcohol and ether, and also that CS₂ was a better reagent than starch or chloroform for iodine which should be set free by a mixture of strong nitric and sulphuric acids.

Peters made use of Rózsahegyi's method (with some modifications) and finds the CS₂ reaction of such delicacy that he can detect iodine in a KI solution of 1:80,000. He found that when fresh ointments, of varying composition as to fat, but all containing KI, were used, a very small amount of I could be detected after a few hours in the urine when properly examined, even though the liquid, before evaporation, gave negative results. The failure of other observers in similar experiments is thought to be due to the imperfection of their method, although that has usually been one which had met with general approval. None of

¹ Peters: Über die Resorption von Iodkali in Salbenform. Centralbl. f. Klin. Med., 1886, 657.

² In a Hungarian Journal and in the Jahresber. ü. d. Fortsch. d. Pharmacog. Pharm. u. Tox., 1878, 564.

TYPHUS FEVER IN NEW YORK.

DURING the past week typhus fever cases have continued to develop among the Russian Hebrews who came over on the *Massilia*, but with the possible exception of a supposed case of the disease in an Italian, received at Bellevue Hospital, none have occurred outside of these Russian immigrants.

During the past week three deaths have occurred from typhus fever. One new case was reported on February 18th, and four on the 19th. Several cases have also been reported among the Russian passengers who had gone to other places before the disease was discovered by the Board of Health, among them being cases at Valatie, Columbia County, N. Y., and at North Oxford and Oakdale, Mass.

The number of deaths that have occurred from typhus fever in New York since 1865 is as follows:

1866	1	132	1878	1	4
1867	1	19	1879	1	4
1868	1	137	1880	1	3
1869	1	125	1881	1	160
1870	1	96	1882	1	17
1871	1	65	1883	1	15
1872	1	86	1884	1	27
1873	1	39	1885	1	15
1874	1	14	1886	1	14
1875	1	28	1887	1	9
1876	1	29	1888	1	4
1877	1	17			

Since 1888 there have been no deaths from the disease until now.

In order to stamp out typhus fever as promptly as possible in the city, the New York Board of Health has appointed ten special sanitary inspectors, selected from the physicians of New York, whose duty it shall be to make a house-to-house visitation of all tenement and lodging houses, in order to discover any cases that may hitherto have escaped the notice of the authorities. For this purpose the city has been divided into ten districts, and each inspector is required to visit every house in his district and personally examine all its inmates. He is also instructed to make a thorough search

³ H. Paschkis and F. Obermayer: Weitere Beiträge zur Hautresorption. Centralbl. f. Klin. Med., 1891, 65.

for small-pox cases, and is provided with virus to vaccinate all persons who are willing to have this done. Cases of small-pox are being discovered every day in the city, and thus far forty-one cases have been reported during the present month; a very unusual number.

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ANNUAL APPROPRIATIONS FOR HOSPITALS IN BOSTON, OTHER THAN THE CITY HOS- PITAL.

THE Committee on Cities of the Massachusetts Legislature gave a hearing on Wednesday last, on the question of allowing the City of Boston to give annual appropriations to hospitals other than the City Hospital. A large number of citizens representing different interests appeared against the bill. The only person appearing for it was the member who first introduced the measure in the Common Council, but his advocacy seemed half-hearted and as if chilled by his surroundings, and when he realized his solitary position he readily acquiesced in the proposition to report, inexpedient to legislate.

We are really amazed that any one should have had the temerity to go to the legislature or anywhere else with a proposition so pregnant with possible mischief.

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MEDICAL NOTES.

RANDALL'S ISLAND HOSPITALS. — The New York Commissioners of Public Charities and Correction have appointed William James Morton, M.D., neurologist to the Randall's Island Hospitals.

IMMIGRATION AND TYPHUS. — A resolution has been introduced in the national House of Representatives in concurrence with the Senate providing for an investigation by the Senate and House Committees on Immigration, of the law relative to immigration, and the facts attending the condition of the typhus-stricken Russians at New York.

REMOVAL OF FILTH AT QUARANTINE. — Since the outbreak of typhus fever in New York, the quarantine officers in Boston have devoted especial attention to Russian Jews. Nine from the steamer *Norseman* and forty from the *Huron* were removed to the quarantine station, and were compelled to take a bath and remain until their clothes were thoroughly cleaned. An account of their first impressions of America would be interesting.

AN INTERNATIONAL CONGRESS OF GYNECOLOGY AND OBSTETRICS. — The Belgian Society of Gynaecology and Obstetrics has taken the initiative in the organization of a series of International Congresses to be held every four years in Switzerland and Belgium alternately. The first Congress is announced to take place at Brussels between the 14th and 19th September, 1892. Three main questions are set down for discussion — (1) Pelvic Suppuration, by Dr. Segond (Paris); (2) Extra-Uterine Gestations, by Dr. Martin

(Berlin); (3) On Placenta Praevia, by Dr. Berry Hart (Edinburgh). The Secretary-General is Dr. Jacobs, of Brussels.

CHOLERA AMONG THE PILGRIMS TO MECCA. — According to the Egyptian delegate to the Hedjaz, Dr. Saleh Soubby, there were in 1891, 46,953 pilgrims who came by sea on their pilgrimage. Of these, 25,253 returned to their homes, the remainder, 21,700 having died, most of them with cholera. Of the large number journeying entirely by land the mortality can only be estimated.

FAMINE IN INDIA. — Official notice has been given in Bombay that famine prevails in that Presidency, and that the famine code will be applied over an area of 6,000 square miles, including the districts of Bijapur, Belgaum and Dharwar. These districts contain a population of 1,500,000 persons.

CALOMEL AND MORPHINE. — During the last year and a half five deaths have occurred in Prussia by the dispensing of morphine by mistake for calomel. On this account the Prussian government has decreed that in future morphine and its salts must be kept by apothecaries in distinctive cupboards, and it is forbidden to prepare mixtures in which either morphine or calomel is used in powder until needed to fill a prescription.

BOSTON.

BEQUESTS TO INSTITUTIONS. — By the will of the late Richard D. Rogers, the sum of \$10,000 is bequeathed to the House of the Good Samaritan.

BOSTON BOARD OF HEALTH. — The Board of Aldermen have confirmed E. J. Donovan as a member of the Board of Health for three years, and for the unexpired term of E. L. Pillsbury, resigned.

DEATHS IN BOSTON. — During the past week there were 206 deaths reported, against 184 for the corresponding week last year, making the death-rate 23.3. The deaths reported as due to influenza were four, consumption 22, pneumonia 27, bronchitis 15. Persons over sixty years of age, 42.

AN ELEVATED ROAD THROUGH HOSPITAL GROUNDS. — A proposed elevated road in the west end of the city, which was to go through the property of Massachusetts General, the Lying-in, and the Samaritan hospitals and the West End Nursery was last week vigorously opposed by representatives of these institutions before the Rapid Transit Commission.

NEW YORK.

INFLUENZA seems to have revived to some extent, as on February 18th, seven deaths were reported from it; the largest number since February 3d, when there were eight deaths.

INVESTIGATION OF A "KEELEY INSTITUTE." — A resolution introduced into the State Senate to investigate the treatment at the Keeley Institute at White Plains, has been referred to the Committee on Public Health.

THE RAPID BREATHER.—The physicians who examined Michael McCarthy, the patient whose extraordinary rapidity of respiration was supposed to be due to a lesion of the medulla oblongata, at Bellevue recently, have been not a little astonished within the last few days to learn that his apparently incurable malady has suddenly disappeared. This was brought about, it seems, by a visit to Father Adams, a suspended Roman Catholic priest of Brooklyn, who professes to cure disease by the application of certain holy relics in his possession. It would appear, therefore, that the case was really one of hysteria, or, at all events, of functional character, and that the impression made on him by the priest and his relics was sufficient to remove the difficulty, at least for the time being. It is said that the man received \$4,000 damages from the Boston Electric Car Company, on account of the result of the injuries he received. Since publicity has been given to this "miraculous cure" by the newspapers, the reverend father has been fairly besieged by hosts of sufferers of various kinds, the lame, the halt and the blind.

SUIT AGAINST A HOSPITAL.—A case of considerable interest has been in the courts during the past week. Suit was brought for \$50,000 damages against the New York Hospital for the loss of a boy's leg which, it was claimed, was due to incompetence and negligence on the part of the hospital surgeons and nurses. The judge finally dismissed the case on the ground thatasmuch as the New York Hospital was a charitable corporation, a suit, under the laws of the State, could not be sustained against it.

Miscellan.

EXECUTION BY ELECTRICITY.

At a meeting of the Section on Public Health and State Medicine of the New York Academy of Medicine, February 17th, Dr. Ira Van Gieson, who made the autopsy, with microscopic examinations, on the body of Kemmler, the murderer, executed by electricity at Auburn prison, gave a report of the results of his examination. He described the appearances of the various parts of the body in detail, and asserted that in such executions, beyond the blistering of the skin by the electrodes, the current passes through the body without producing any effect upon the organs or internal tissues. The blood corpuscles, red and white, he declared, were not affected either by rupture or contraction or in any other manner by the passage of the current.

Dr. Samuel Lockwood, of Freehold, N. J., however, in a paper read before the New York Microscopical Society, on February 19th, on "The Blood of Kemmler after His Electrocution, Demonstrating the Effect of Electric Shock on the Blood Corpuscles," stated that there were certain changes produced in the blood. He examined two specimens of Kemmler's blood—one taken from the back of the head, near the place of contact of the electrode, and the other from the thigh, where the blood was not in the direct line of the current, and was only affected by the general diffusion of

the electricity through the body. He found that the corpuscles were both smaller and fewer in number in the blood from the head than in that from the thigh. The contraction in size, he believed, however, was due to the heat produced by the current.

BIRDS AS SURGEONS.

SOME interesting observations relating to the surgical treatment of wounds by birds were recently brought by M. Fabio before the Physical Society of Geneva.¹ The author quotes the case of the snipe, which he had often observed engaged in repairing damages. With its beak and feathers it makes a very creditable dressing, applying plasters to the bleeding wounds, and even securing a broken limb by means of a stout ligature. On one occasion he killed a snipe which had on its chest a large dressing composed of down, taken from other parts of the body and securely fixed to the wound by the coagulated blood. Twice he had brought home snipe with interwoven feathers strapped on to the sides of fractures of one or other limb. The most interesting example was that of a snipe, both of whose legs he had unfortunately broken by a misdirected shot. He recovered the animal only on the following day, and he then found that the poor bird had contrived to apply dressings and a sort of splint to both limbs. In carrying out this operation some feathers had become entangled around the beak, and not being able to use its claws to get rid of them, it was almost dead from hunger when discovered. In a case recorded by M. Magner, a snipe which was observed to fly away with a broken leg, was subsequently found to have forced the fragments into a parallel position, the upper fragmants reaching to the knee, and secured them there by means of a strong band of feathers and moss intermingled. The observers were particularly struck by the application of a ligature of a kind of flat-leaved grass wound round the limb, of a spiral form, and fixed by means of a sort of glue.

INFLUENCE OF COLD ON THE PRODUCTION OF PNEUMONIA.

LIPARI,² in a paper on the above subject, says that, along with the pneumococcus, cold is of great influence in causing pneumonia. Animals which have remained well after an intra-tracheal injection of pneumonic sputum become affected with pneumonia very quickly if exposed, either before or after the injection, to cold. The author thinks that the cold disables the ciliated epithelium of the bronchi, and causes a swelling of the mucous membrane, by which means the entrance of the infectious material into the alveoli is facilitated.

CHRONIC ARSENIC POISONING.

THE theory proposed by Selmi, that toxic gases are formed by the action of microbes on pigments contained in wall-papers and the like, has received additional support by the recent experiments of Gosio in the laboratory of the Public Health Department in Rome.³

¹ Medical Press, December 36.

² Fortschritte der Medizin, December, 1890.

³ British Medical Journal, December 26th.

This observer made nutrient media of potato paste, impregnating them in some cases with arsenious acid, and in others with various arsenical pigments; the nutrient media thus prepared were exposed for some days to a constant current of air, which was drawn over them by means of an aspirator. The air after it had passed over the paste was made to bubble through a solution of silver nitrate, which would detain all volatile arsenical compounds which might have been formed. As a result of this first rough experiment the author found that many moulds and some fission fungi developed on the arsenical media, and that very appreciable quantities of volatile arsenic compounds were given off. Proceeding then to isolate the different species which developed, and testing the action of each on fresh sterile prepared media, he found that only two species — mucor mucedo, and in a less degree penicillium glaucum — were able to split up the solid arsenical compounds as above described. From a great number of experiments he comes to the following conclusions: Mucor mucedo will grow well in presence of a notable quantity of arsenic; it seems to grow more luxuriantly under these than under normal conditions. Many fixed compounds of arsenic, and among them the green pigments ordinarily used, are changed by the growth of these moulds into gaseous bodies, among which is certainly arseniuretted hydrogen. The sulphides are not decomposed like the oxygenated compounds, but their presence in the culture media seems in no way detrimental to the growth of the moulds. Under certain conditions of light, moisture, and temperature, it is possible to obtain arsenical gas by the growth of mucor mucedo (and perhaps other mucorineae) on tapestry colored by either Scheele's or Schweinfurt's green. Thus without denying the possibility of occasional poisoning by detached particles, the author considers he has made out a strong case in favor of the germ theory of arsenical poisoning.

THERAPEUTIC NOTES.

ANTIDOTE IN PHOSPHORUS POISONING. — Bókai and Koranyi¹ recommend a solution of permanganate of potash, of the strength of from one-fifth to one-third per cent. as an antidote in phosphorus poisoning. This solution oxidizes the phosphorus into a harmless phosphoric acid, whereas the solution of permanganate is no stronger than one-half of one per cent. does no harm to the stomach.

EUCALYPTOL.² — Mr. G. Archie Stockwell shows, in the *Bulletin of Pharmacy*, that eucalyptol is not a proper name for oil of eucalyptus, but should be restricted to eucalyptus camphor, this perversion of the word being either due to ignorance or for ulterior ends. Eucalyptus camphor, however, has no therapeutic value beyond that of a good oil, which, as it is a pure terpenes, may agreeably be substituted for common oil of turpentine.

BROMIDE OF ETHYL AS AN ANÆSTHETIC.³ — Witzel reviews the results obtained in four hundred and sixty-five administrations of ethyl bromide as an anæsthetic. The effects were good, except in twenty-eight cases, in which the following disagreeable symptoms were noted:

¹ St. Petersburg med. Works.

² American Journal Medical Sciences.

³ Therapeutic Gazette, January.

Great excitement in nine cases, in four of them with marked sweating; cyanosis in two patients, who were hilarious students; asphyxia, which lasted a short time upon the occurrence of anesthesia in a number of cases, and in two cases long enough to make artificial respiration necessary; indisposition and weakness in the limbs in three of the cases, with severe vomiting; urination in three cases, great sexual excitement more frequently; in two cases 60 and 30 grammes respectively of ethyl bromide failed to produce anesthesia.

PEROXIDE OF HYDROGEN. — Richardson⁴ in a long paper on the medical uses of this substance gives, among others, the following prescriptions:

For a gargar.

R	Acidi tannici	gr. x.
	Glycerin	3 fls.
	Alcohol	3 ss.
	Aqua distil.	3 iv.
	Sol. hydrogen peroxid. (10 vols.) . . . ad	3 viii. M.

For anaemia, and in the first stage of phthisis,

R	Sol. hydrogen peroxid. (10 vols.) . . .	3 liss.
	Acidi phosphori dil.	3 l.
	Syrupi ferri hypophos.	3 iv.
	Glycerin	3 l.
	Aqua	ad 3 vi. M.

Dose, one ounce.

For severe cough,

R	Sol. hydrogen peroxid. (10 vols.) . . .	3 liss.
	Morphine hydrochlor.	gr. ss.
	Syrupi tolu	3 vi.
	Glycerin	3 liss.
	Aqua	ad 3 vi. M.

Dose, one ounce.

Correspondence.

LETTER FROM JAPAN.

YOKOHAMA, JAPAN, January 20, 1892.

MR. EDITOR: — The general hospital here, excellently located on hill, was built about eighteen years ago. It has accommodations for about fifty patients of both sexes. Sleeping arrangements seem to be mixture of foreign and native ways, that is, partly in cots, partly on mats on the floor. Sewers are used to let water run away; but intestinal discharges are received in vessels and carried off. Roses were blooming in the hospital grounds — mid-January.

A Japanese gentleman from the *Kencho* (City Hall), was my friend and guide (in schools, hospitals and language). The physician in charge understood English, without venturing to speak the tongue, which so many of the Mikado's subjects are learning — especially in the last three of the eight years' course in the public schools.

In the vicinity is the "lock-hospital," with room for more than the present inmates. This building was formerly used for a much larger territory. Recently, however, each political subdivision has its own temporary home for the afflicted. A hospital for contagious diseases is situated on the outskirts of the city. January 13th, 120 cases of small-pox were reported in Yokohama, 747 in Tokyo. The local authorities are using vaccination to stay the spread of the disease in both cities; near this city is a crematory, whence the bones alone are taken for burial in the ground; but the old method of inhumation is yet largely practised. Burial of the body is forbidden within the city limits of Tokyo.

In Tokyo, Dr. T. Nakahama (Director of the Tokyo Hygiene Laboratory, Member and Manager of the Central Board of Health), conducted me about the institution under his charge, the chief one of the empire, others being at Osaka and Yokohama. At these laboratories are made

* Asclepiad, Fourth Quarter, 1891.

examinations of all food-stuffs and all other articles connected with the health of the people. As health officer, Dr. Nakahama is obliged to go to various parts of the Empire to investigate epidemics or special diseases, and inspect local sanitary conditions. This place is fitted up with all the modern appliances for chemical analysis, bacteriological studies, etc. During the past few months *tuberculin* has been made, apparently the same as that received from Berlin. Experiments with *tuberculin* are being made on guinea-pigs. Many "cultures" were *in situ*—the various stages of such work in active operation. The museum has an extensive variety of filters, disinfecting apparatus, heating contrivances, models of sanitary appliances, etc. The library consists largely of German publications, with works in other foreign tongues. The periodicals have the familiar look of European and American journals, —German, French, English, American publications.

The government has decided to supply Tokyo with "water-works" extending thirty miles distant to source of supply. The people were largely opposed to this, probably chiefly because of the great expense. But the authority, in this land, is yet in the hands of the intelligent, and the uninformed masses are forced to adopt modern ways that appear to be good, even if "old ways are good enough." The question of drainage, sewerage, etc., must be left, for the present, till the revenue will allow the needed outlay.

A few steps from this institute, is a branch of the University Hospital (to which I referred in a former letter), these two being the only public ones in the city. This is similar in form and accommodations to the other, though smaller. At this season, only about half the space is occupied. In the summer (warm weather) there are many more patients.

The annual reports for the past year have not yet been published.

Very respectfully,
F. B. STEPHENSON, Surgeon, U. S. N.

A NEW AND SAFE WAY OF EXPEDITING DIFFICULT CASES OF LABOR.

BOSTON, February 8, 1892.

MR. EDITOR:—Dr. Marshall L. Brown, in the JOURNAL of February 4th, speaks of a new and safe way of terminating difficult labors by pressure upon the abdomen. I am surprised to learn that it is either new or safe.

My preceptor forty years ago was a well-known accoucheur, and widely demanded as a consulting physician in confinement cases. He practised in my presence, and taught me to add force to uterine action when the uterus was incompetent of itself, and that practice was followed by me for many years.

A case came into my hands from a neighboring doctor who had spent two days and two nights with the young woman in her first confinement. Getting disengaged on the second night and also desiring to be relieved to see other patients, he gave the woman ergot while the cervix was but little dilated. It acted on the muscles of the lower segment as well as on the expulsive muscles, thus holding the child back as much as it was forced downward, causing excruciating suffering, which he relieved by shutting off the muscular action by doses of morphine.

When I reached the case, four miles away, in the early morning, uterine action was almost totally suspended and the cervix dilated to the size of a quarter of a dollar; but all things were natural. Having nothing to do but wait, I returned home, to be sent for when labor started up again, which it did very tardily at eight o'clock that evening. The pains were not strong, and the cervix but slowly gave way before them; I had my forceps with me, but thought that there was really no necessity for their application. Being more familiar with their use to-day, I should probably apply them in a similar case. As it was, I did not, but applied my hand over the uterus pressing and relaxing with the pain. The uterus had been so much exhausted by overaction from the ergot that there was not natural

force to do the work and no prospect for the termination of the labor for a long time. As the cervix became more dilated, I got a strong woman to assist me, the patient making as strong expulsive effort herself as she could. At length she was safely delivered about seventy-two hours from the setting in of the labor.

That this procedure is always safe I do not believe; for I think I had a case in which the child was lost by it. This patient was about thirty-two. She was well developed and vigorous. She had had some half-dozen conceptions, which she somehow lost, the oldest fetus being six months. Everything went well till the cervix dilated to the size necessary to let a six months' fetus pass, when it seemed rigid and unwilling to dilate any further, though the pains were frequent and very strong. I applied such remedies as had reputation in overcoming rigidity. Years before I should have bled such a patient, but did not do it in her case, as the fashions of practice had changed. After many hours of this active work, during which the child was yet alive, the rigidity of the os began slowly to yield, when I began external pressure. Now the pains were long and the pressure correspondingly long, causing strangulation of the cord and the death of the child before it passed the upper strait; this I attributed more to the external pressure than to the uterine contractions themselves, strong though they were. To-day, in a like case, I would give more chloroform, and get on the forceps as soon as I could, deeming it safer to exert traction below than to add the force above when the uterus was itself so strongly acting. Relaxing the cervix by venesection would be the best method, being safer for both mother and child. Since the above I have more rarely resorted to external pressure.

Very truly yours, E. CHENERY, M.D.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, FEBRUARY 13, 1892.

Cities.	Estimated population for 1890.	Reported deaths Reported in week.	Deaths under one year.	Percentage of deaths from infectious diseases.	Percentage of deaths from			
					Ame. lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York	1,515,291	808	236	14.64	21.24	3.60	.72	5.76
Philadelphia	1,069,857	540	230	20.37	18.14	3.42	3.42	3.42
Baltimore	1,064,964	225	178	13.87	15.58	1.52	3.42	2.50
Brooklyn	806,343	287	134	17.16	21.84	2.86	1.26	8.32
St. Louis	451,770	—	—	—	—	—	—	—
Boston	348,471	191	58	8.67	23.46	1.53	1.53	3.06
Baltimore	343,430	139	58	43.75	22.22	—	—	—
Baltimore	298,000	134	45	7.40	11.11	—	—	—
Cleveland	282,000	118	42	10.20	16.00	.85	.85	4.25
New Orleans	242,939	—	—	—	—	—	—	—
Pittsburg	240,000	104	37	17.28	12.48	—	7.68	5.76
Milwaukee	240,000	85	35	41.18	27.06	2.34	4.28	12.84
Washington	239,000	139	45	7.32	30.24	—	—	7.2
Charleston	76,168	25	9	11.11	22.22	—	—	3.79
Charleston	65,165	38	13	—	2.63	—	—	—
Portland	36,425	19	14	5.26	29.49	—	—	—
Worcester	81,625	20	9	45.00	32.00	—	—	9.39
Lowell	75,200	22	12.00	23.00	—	—	—	—
Mill River	74,338	33	13	6.06	30.30	—	—	6.06
Cambridge	70,026	20	6	10.00	15.00	—	—	10.00
Lynn	55,727	15	3	—	43.33	—	—	—
Springfield	41,119	16	3	18.75	12.50	—	14.10	7.40
Foxboro	40,733	14	6	7.14	14.28	—	—	6.25
Bedford	30,801	11	4	9.09	18.18	—	—	8.33
Chelsea	27,909	11	4	9.09	18.18	—	—	9.09
Haverhill	27,412	7	0	—	14.28	—	—	—
Foxboro	24,651	8	3	25.00	12.50	—	—	12.50
Quincy	24,379	6	2	—	33.33	—	—	—
Newton	23,031	6	0	—	16.66	—	—	—
Malden	22,057	14	7	7.14	50.00	—	—	7.14
Waltham	18,124	12	2	—	25.00	—	—	—
Wellesley	17,281	3	2	—	—	—	—	—
Quincy	16,723	5	0	—	—	—	—	—
Northampton	11,980	6	0	—	33.33	—	—	—
Amherst	13,947	6	0	—	16.66	—	—	—
Newburyport	11,724	2	0	—	10.00	—	—	—
Marlboro	10,193	10	2	20.00	20.00	—	—	—
Hyde Park	10,158	4	0	—	25.00	—	—	—
Brookline	10,158	—	—	—	—	—	—	—

Deaths reported 3,443; under five years of age 1,252; principal infectious diseases (small-pox, measles, diphtheria and croup).

diarrhoeal diseases, whooping-cough, erysipelas and fevers) 493, acute lung diseases 725, consumption 340, diphtheria and croup 189, typhoid fever 108, scarlet fever 79, diarrhoeal diseases 34, cerebro-spinal meningitis 23, whooping-cough 23, measles 13, erysipelas 11, malarial fever 8, pneumonia 4.

From diarrhoeal diseases Boston 1, New York 14, Brooklyn 5, Chicago 4, Cleveland 3, Milwaukee and Lowell 2 each, Boston, Cincinnati, Washington and New Bedford 1 each. From cerebro-spinal meningitis Chicago 9, Brooklyn 4, Philadelphia and Washington 3 each, Boston, Milwaukee and Lawrence 1 each. From whooping-cough Chicago 6, New York 4, Brooklyn 3, Philadelphia and Pittsburgh 2 each, Boston, Cleveland, Washington, Portland, Lowell and Gloucester 1 each. From measles New York 9, Brooklyn 2, Chicago and Nashville 1 each. From erysipelas New York and Brooklyn 3 each, Philadelphia 2, Boston, Cleveland and Washington 1 each. From malarial fever Brooklyn 5, New York 2, Chicago 1.

METEOROLOGICAL RECORD.

For the week ending February 13, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Date.	Baro-meter		Thermometer		Relative humidity		Direction of wind		Velocity of wind		Weath'r.		Rainfall in inches
	Daily mean	Daily maxm.	Daily maxm.	Daily minm.	8 A.M.	8 P.M.	8 A.M.	8 P.M.	8 A.M.	8 P.M.	8 A.M.	8 P.M.	
S... 7	30.10	25	33	15	55	100	79	W.	S.E.	6	C.	R.	.02
M... 8	29.71	31	34	28	100	100	100	N.W.	N.E.	7	E.	R.	.04
T... 9	29.87	30	34	26	89	70	80	N.W.	N.W.	9	O.	C.	.01
F... 10	29.71	31	34	26	89	70	80	E.	N.W.	11	N.	N.	.20
T... 11	29.31	31	34	27	100	100	100	E.	N.W.	12	N.	N.	.20
F... 12	29.22	27	33	20	78	72	75	S.W.	W.	14	12	C.	.01
S... 13	29.69	14	20	8	71	69	66	W.	W.	19	24	C.	.01
MEAN													.94

*O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. + Indicates trace of rainfall. MEAN for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 13, 1892, TO FEBRUARY 19, 1892.

The leave of absence granted CAPTAIN WALTER W. R. FISHER, assistant surgeon, U. S. A., is extended fifteen days.

The leave of absence on surgeon's certificate of disability granted FIRST-LIEUT. JAMES D. GLENNAX, assistant surgeon, U. S. A., is extended fifteen days.

MUTTER LECTURESHIP OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The next course of ten lectures under the bequest of the late Prof. Thomas Den Mutter, M.D., LL.D., "On Some Point or Points connected with the Diseases of the Nervous System," will be delivered in the winter of 1892-93, before the College of Physicians of Philadelphia. Compensation, \$900. The appointment is open to the profession at large. Applications, stating subjects of proposed lectures, must be made before October 15, 1892, to

WILLIAM HUNT, M.D., Chairman of Committee,
13th & Locust Sts., Philadelphia, Pa.

APPOINTMENTS.

R. H. FITZ, M.D., has been appointed Professor of the Theory and Practice of Medicine in the Harvard Medical School.

H. P. WALCOTT, M.D., has been elected a Trustee of the Massachusetts General Hospital.

RECENT DEATHS.

LEWIS H. STEINER, M.D. (Penn., 1849), librarian of the Enoch Pratt Library, Baltimore, died February 18th, aged sixty-four. He was at one time editor of the *American Medical Monthly*, and the author of numerous works on different subjects. During the war he was chief inspector of the United States Sanitary Commission in the Army of the Potomac, and after the war reorganized the public schools of Frederick County, Maryland. In 1869 he received the honorary degree of A.M. from Yale College. In 1871 he was elected to the State Senate from Frederick County. When the Enoch Pratt Free Library was established six years ago, Dr. Steiner was elected librarian.

CHARLES PARKE KEMP, M.D., died at Rugby, Tenn., February 12th, aged fifty-one. He graduated from Harvard College in the class of 1862, and from the Medical School in 1866. He served for a year as house-officer at the Boston City Hospital, and then settled in Springfield, where he remained until 1879, when on account of ill health he went to Rugby, where he has since remained.

JAMES SWENNEY, M.D., died in Brooklyn, February 18th, aged fifty-four. During the war he served as surgeon of the 153d New York Regiment. He has twice been a member of the Brooklyn Board of Education.

CELESTE BURNHAM, M.D. (Dart., 1869), M.M.S.S., of Lynn, died February 17th, aged fifty.

A. H. FAQUET, M.D., Professor of Clinical Medicine in the Medical Department of Laval University, Montreal, died recently at St. Cuthbert.

BOOKS AND PAMPHLETS RECEIVED.

Annual Reports of the President and Treasurer of Harvard College, 1890-91.

First Annual Report of the State Board of Medical Examiners of New Jersey, 1891.

Bromoform in the Treatment of Pertussis. By E. J. Mellish, M.D. Reprint. 1892.

Cocca and Cocaine. By William Martindale, F.C.S. Second edition. London: H. K. Lewis. 1892.

Land Liberation as a Public Health Measure. By George Homans, M.D., St. Louis. Reprint. 1892.

Thirteenth Annual Report of the State Board of Lunacy and Charity of Massachusetts. January, 1892.

The Relation of Land Monopoly to Population Health. By George Homans, M.D., St. Louis. Reprint. 1891.

Report of the Directors of the Boston Training-School for Nurses, attached to the Massachusetts General Hospital for 1891.

Apparatus for Collecting Water for Bacteriological Examination. By Samuel G. Dixon, M.D., Philadelphia. Reprint. 1891.

Nursing in Abdominal Surgery and Diseases of Women. By Anna M. Fullerton, M.D., Philadelphia: P. Blakiston, Son & Co. 1891.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Year 1891.

Notes on General *versus* Local Treatment of Catarrhal Inflammations of the Upper Air-Tract. By Beverly Robinson, M.D., New York. Reprint. 1891.

Pneumonic Fever; its Mortality, with a Consideration of some of the Elements of Prognosis. By Edward F. Wells, M.D., of Chicago, III. 1892.

Forty-fourth Annual Report of the Trustees of the Massachusetts School for the Feeble-minded at Waltham, for the Year Ending September 30, 1891.

An Account of the Influenza as it Appeared in Philadelphia in the Winters of 1889-90 and of 1891-92. By J. Howe Adams, M.D., of Philadelphia. Reprint. 1892.

Annual Address before the State Board of Health of Pennsylvania. By Prof. Samuel G. Dixon, M.D., of Philadelphia. Read May 15, 1891, at the Sanitary Convention at Altoona.

The Microscope and Histology. Part I. The Microscope and Microscopical Methods. By Simon Henry Gage, Associate Professor of Physiology, Cornell University, Ithaca, N. Y.: Andrus & Church. 1891.

Report of the Board of Health of the City of Newport, R. I., on the Character of the Public Water-Supply. By Thomas M. Drown, M.D., Professor of Analytical Chemistry in the Massachusetts Institute of Technology, Boston.

The Complete Medical Pocket-Formulary and Physicians' Vade-Mecum, containing over 2,500 prescriptions, etc. By J. C. Wilson, M.D., Physician to the German Hospital, Philadelphia; J. L. Lippincott Company. 1892.

Hospitals and Asylums of the World, Their Origin, History, Construction, etc., with plans of the chief medical institutions. By Henry C. Burdett. In four volumes and portfolio. Vols. I and II. London: J. & A. Churchill. 1891.

Diseases of the Skin. A Manual for Practitioners and Students. By W. Allan Jamieson, M.D., F.R.C.P., Lecturer on Diseases of the Skin, School of Medicine, Edinburgh. Third edition. Philadelphia: Lea Brothers & Co. 1892.

A Treatise on the Ligation of the Great Arteries in Continuity, with Observations on the Nature, Progress and Treatment of Aneurism. By Charles A. Ballance, M.B., F.R.C.S., Associate Surgeon to St. Thomas's Hospital and Walter Edmunds, M.A., M.C., F.R.C.S. London: Macmillan & Co. 1891.

Original Articles.

A CASE OF DIFFUSE FIBROMA WITH A TENDENCY TO INTRACANILICULAR GROWTH OF BOTH BREASTS; OPERATION ON EACH WITH AN INTERVAL OF THREE WEEKS; RECOVERY.¹

THE SMALLER WEIGHED, AFTER REMOVAL, SEVENTEEN POUNDS, THE LARGER FORTY-THREE; COMBINED WEIGHT, SIXTY POUNDS.

BY C. E. PORTER, M.D.,
Surgeon Massachusetts General Hospital; Professor of Clinical Surgery, Harvard University.

I SHOULD NOT think of asking the attention of such a distinguished gathering of surgeons to the report of a single case, were it not that it falls to the lot of but few surgeons to see such a case, and still fewer to operate upon one.

My patient, Mrs. M., aged thirty-seven, was known

Feeling that loss of blood was one of the dangers, I had made two large skewers; with these I transfixed the breast vertically and horizontally close to the chest wall, and behind them placed a tightly-drawn rubber tourniquet. An anterior and posterior flap was made and the breast removed. All vessels large enough to be recognized were tied with sterilized silk before the tourniquet was removed, and little blood was lost. The operation so far was done in the sitting position; she was then placed upon a table and a few remaining pieces of the breast tissues removed. Continuous silk suture closed the wound, with bone drainage. Six days after the stitches were removed, and there was a slight oozing at two points. Four days later wound solid, and dressed with collodion dressing for support. Three weeks after first operation I removed the remaining breast in the same manner. This was followed by more marked shock than the first, but six hours after she had reacted well and was in good con-

SOCIETY NOTICE.**SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION.**

The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place, on Wednesday evening, March 2, 1892, at eight o'clock.

A report of experimental and clinical investigations into the use of Dermatol will be made by Dr. A. K. Stone.

The general subject for Discussion will be the Surgery of the Liver.

Dr. W. W. Keen, of Philadelphia, will present a paper upon: "Three Cases of Hepatic Surgery: I, Resection of a large portion of the liver for adenoma of the bile ducts, recovery; II, Perforating gun-shot wound of the liver, laparotomy, recovery; III, Cholecystotomy in which the gall-bladder had to be reached through the pancreas, death." Dr. Geo. W. Gay, Dr. A. T. Cabot and Dr. M. H. Richardson will each report Cases of Cholecystotomy; Dr. M. H. Richardson, A Case of Echinococcus Cyst of the Liver; Dr. Homer Gage, of Worcester, A Case of Secondary Laparotomy for Pistol-shot Wound of Liver; Dr. Irish, of Lowell, Cases of Hepatic Abscess; Dr. S. J. Minter, Retention Cyst of Liver.

It seems necessary to remind the members of the Section that the meeting is called for EIGHT O'CLOCK.

CHARLES L. SCUDDER, M.D., Secretary, 94 Charles Street.

... cases could be suspended. Never any pain; appetite good, and sleeps well. Pulse, 96; temperature, 97.8°.

Physical examination shows she is pale, emaciated, with ovarian facies. Both breasts enormously enlarged. Right breast: largest circumference, thirty-eight inches; length from chest wall to nipple, seventeen inches; circumference at base, twenty-three inches. Left breast: largest circumference, twenty-eight inches; length from chest wall to nipple, fourteen inches; circumference at base, twenty-three inches. Skin edematous, thickened and porky. Throughout both are to be felt movable, hardened masses of irregular outline, varying in size from an orange to a closed fist. No tenderness. For two weeks every attention was given to building up her strength for an operation, which in size of wound would equal a hip-joint amputation. At the end of that time she was brought to operation. I decided to remove the left and smaller breast first.

¹ Read before the American Surgical Association, September, 91.

It should now be stated that before she left the hospital my senior house-surgeon called my attention to an enlargement of the uterus, and her history stated that her catamenia had been absent three months before entrance. I told him as she knew nothing about it to let the matter drop. She might be pregnant, and that time would determine; she might have a uterine fibroid, but had better be left to find it out later, for after two such severe operations I was content that she was well. Her condition was not suspected until her convalescence after the second operation.

HISTOLOGICAL EXAMINATION.

The histological report is by Dr. W. F. Whitney, Pathologist to the Hospital.

"The section surface of the growth, which was irregularly divided into lobules, was of a slightly translucent, grayish color, and traversed by numerous irregularly branching chinks or fissures lined with a softer and more grayish opaque substance than the intervening tissue.

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Read May 10, 1891, at the annual meeting.

The Microscope and Histology. Part I. The Microscope and Microscopical Methods. By Simon Henry Gage, Associate Professor of Physiology, Cornell University. Ithaca, N. Y.: Andrus & Church. 1891.

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My patient, Mrs. M., aged thirty-seven, was born and has lived in Nova Scotia. She entered the Massachusetts General Hospital just at the close of the service of Dr. A. T. Cabot, who did not think her at that time in a condition to undergo such serious operations, and she became a patient of mine in the service following his. Her family history is of no importance. Her personal history is that of ordinary health up to three years ago. Has borne two children, the youngest ten years old. Her catamenia have been regular and normal up to three months ago, when they ceased.

Three years ago she discovered a hard lump in the upper part of right breast, which gradually increased in size, and with it the whole breast. Three months after the right breast commenced to enlarge, the left breast became similarly affected, and at the end of six months the right was the size of a baby's head, and the left a little smaller. For sometime, then, the growth was very gradual; but three months ago a rapid increase took place, and they became so burdensome by their size and weight that she could not work and could stand only for a short time. She is most comfortable sitting with the breasts resting on a pillow in her lap. In the recumbent posture the pressure of the weight and the dragging upon the chest walls embarrass her respiration: so much so, that after her entrance to the hospital a frame was made upon which the breasts could be suspended. Never any pain: appetite good, and sleeps well. Pulse, 96; temperature, 97.8°.

Physical examination shows she is pale, emaciated, with ovarian facies. Both breasts enormously enlarged. Right breast: largest circumference, thirty-eight inches; length from chest wall to nipple, seventeen inches; circumference at base, twenty-three inches. Left breast: largest circumference, twenty-eight inches; length from chest wall to nipple, fourteen inches; circumference at base, twenty-three inches. Skin edematous, thickened and porky. Throughout both are to be felt movable, hardened masses of irregular outline, varying in size from an orange to a closed fist. No tenderness. For two weeks every attention was given to building up her strength for an operation, which in size of wound would equal a hip-joint amputation. At the end of that time she was brought to operation. I decided to remove the left and smaller breast first.

Feeling that loss of blood was one of the dangers, I had made two large skewers; with these I transfixed the breast vertically and horizontally close to the chest wall, and behind them placed a tightly-drawn rubber tourniquet. An anterior and posterior flap was made and the breast removed. All vessels large enough to be recognized were tied with sterilized silk before the tourniquet was removed, and little blood was lost. The operation so far was done in the sitting position; she was then placed upon a table and a few remaining pieces of the breast tissues removed. Continuous silk suture closed the wound, with bone drainage. Six days after the stitches were removed, and there was a slight oozing at two points. Four days later wound solid, and dressed with collodion dressing for support. Three weeks after first operation I removed the remaining breast in the same manner. This was followed by more marked shock than the first, but six hours after she had reacted well and was in good condition. Temperature, 98°; pulse, 80.

In ten days the dressings and sutures were removed, and there were two small stitch-hole abscesses. Convalescence rapid; and in ten days she was strong enough to desire to leave the hospital and visit some friends. There remained two very small granulating spots, and she was advised to report at the hospital soon, in case all did not go well. The sequel of this seems to have been decided by the irony of Fate, for the woman, instead of visiting her friends in the near vicinity of Boston and reporting in two weeks at the hospital, decided in a few days to return home, and took, in the middle of winter, a cold and perilous sea-voyage. She arrived home the day before Christmas, and called her physician to dress two small spots where the cicatrix had given away since she left the hospital. From a letter from her physician, Dr. C. A. Foster, of Bridgewater, N. S., I obtained the following history: At the time he first saw her, temperature and pulse were normal, but she was much exhausted by her sea-voyage and the attendant seasickness, which was violent during her whole passage, and she had suffered much from cold. For about a week she seemed to improve, when she developed erysipelas, first in the region of right breast, and then extending over back and abdomen. This in four days had faded markedly when she suddenly aborted a five to six months' fetus, and died three hours afterwards in collapse.

It should now be stated that before she left the hospital my senior house-surgeon called my attention to an enlargement of the uterus, and her history stated that her catamenia had been absent three months before entrance. I told him as she knew nothing about it to let the matter drop. She might be pregnant, and that time would determine; she might have a uterine fibroid, but had better be left to find it out later, for after two such severe operations I was content that she was well. Her condition was not suspected until her convalescence after the second operation.

HISTOLOGICAL EXAMINATION.

The histological report is by Dr. W. F. Whitney, Pathologist to the Hospital.

"The section surface of the growth, which was irregularly divided into lobules, was of a slightly translucent, grayish color, and traversed by numerous irregularly branching chinks or fissures lined with a softer and more grayish opaque substance than the intervening tissue.

¹ Read before the American Surgical Association, September, 91.

TABLE OF CASES.

No.	Reference.	Social Condition.	Age.	Breasts.	Duration.	Treatment.
1	Deutsche Chirurgie Lieferung, xii, § 43, p. 29. 1880. Billroth.	Domestic, single, virgo.	16 years.	Both. Left 23 in., right 21 months. 194 in. circumference.		Unoperated.
2	Billroth, 1880.	Domestic, pregnant.	22 years.	Both. Left 65 cm., right 68 cm. circumf.	5 months.	Unoperated.
3	Veipcan, 1857. Traité des Maladies du Sein. Paris, 1859.	Married, two sons.	43 years.	One. Left.	1 year.	Removed. Microscope.
4	Domarquay. Gazette Medicale. Paris, 1859, p. 818.	Married.	40 years.	One. Left, 66 cm. 4 kilog. Begun during pregnancy.	7 years.	Removed.
5	Gazette du Hôpital, p. 45. 1859. Manee.	Single.	17 years.	Both. Left 75 kilog., right 8 kilog.	13 years.	Removed at 1 mo. interval.
6	Schmidt's Jahrbücher, cvi, p. 51. 1869. Lotzbeck.		26 years.	One. Left. After two pregnancies, 169 lbs., 3 litres of milk.	8 years.	Removed.
7	Marjolin. Bulletin de la Société de Chir. Paris. Vol. ix, p. 342.	Single.	15 years.	Both. Right, 1,510 gms.		Removed R. Microscope.
8	Richef. Labarrague : Etude sur l'Phys. gic. Paris, 1875.	Single.	15 years.	Both. 1,985 gms., one weighed.	1 year.	Removed. Microscope.
9	Rossati and F. Calzi. Archivio della scuola d'Anat. pathol. Vol. II.	Virgin.	14½ years.	Both. Right 169 cm. 7.22 years. kilo., left 84 cm. 3.3 kilo.		Removed.
10	Humbert, 1883. Lancette Française. Gazette des Hôpitaux. Paris.		22 years.	Both.	1 year.	Unoperated.
11	T. J. Crofford. The Triennial State Medical Society. Little Rock, Arkansas. Vol. I, No. 12. June, 1861.	Virgo.	15 years.	Both. Right 27½ in., left 31 in. circumference.	1 year.	Removed.
12	Dr. Roy. Indian Medi. Gazette. Vol. XVI. Calcutta. 1881.	Married, children, 8½ mos. pregnant.	30 years.	Right only; 14 in. long. 12 in. peduncle, 12 lbs.		Removed.
13	Le progrès Médical, 14th year, 2d Series. 1886. Dr. Desenne.	Virgo.	15 years.	Both. Left 3 kilo., right 1 year. 3,825 gms.		Left operated, right operated.
14	Prof. Baldassari. Gazette Medico Torino, XXXV. 1884.		35 years.	Left, 55 cm. circumf.		Operated. Died on 14th day with fever.
15	Hoy. Practical Observations in Surgery. London, 1884.		14 years.	Both very large.		Left operated, right then diminished and etc. appeared.
16	Hess. Correspondanzblatt des Vereins Nassauischer Aerzte, vol. 49, p. 17. 1859.			Both.		Operated at an interval.
17	Glück. Amtlicher Bericht über die 39 Versammlung Deutscher Naturforscher und Aerzte in Goessen in Sept., 1861. Goessen, p. 219. 1865.			Both.		Operated at an interval. Microscope. Cysto-sarcoma.
18	Texas State Medical Association. Nelson.	Married, one child.	26 years.	One. 8½ lbs.		Operated.
19	Western Medical Reporter. Chicago, 1884. Dr. Owen.	Married.	42 years.	Both. Right 22 lbs., left 23 lbs.		Operated.

"Microscopic examination showed the bulk of the growth to be made up of a fibrous tissue rich in cells, and holding in its interstices considerable thin serous fluid. Imbedded in this were gland acini and ducts widely separated, and into the openings of which the fibrous tissue had forced its way. These could be directly traced into the fissures seen with the eye, the lining of which proved to be flattened epithelial cells. In structure, therefore, the growth is essentially a diffuse intracanicular fibroma, and is not to be regarded in the sense of a true hypertrophy of the breast; which is suggested by the bilateral and external, somewhat symmetrical shape."

Billroth, in the *Deutsche Chirurgie*, on "Diseases of the Breast," says that diffuse hypertrophy develops usually at the time of, or soon after, the first menstruation; most frequently it is noticed from the fourteenth to the sixteenth year. It begins, however, in some cases two or three years after the first menstruation. The development of the hypertrophy then goes on very rapidly for two to four months, and then, as a rule, maintains comparatively the same size, or increases still more with the first pregnancy, then to remain unchanged. In the cases I have been able to collect—nineteen in all—the time of life at which the disease commences varies much more than Billroth states—one being forty-three and another forty-two years old,

and with those who were married, of which there were six, the ages varied from twenty-two to forty-three years. Of the unmarried, of which there were eight, the age varied from fourteen to seventeen years. There were three in which it was not stated whether married or single, and the ages were twenty-two, twenty-six, thirty-five, and there were two in which no age was mentioned, nor whether single or not. In thirteen cases both breasts were affected. Billroth says, in regard to the course of the disease, it alone is established that through the weight of the tumor the ability to do work is most altered, and that, as a rule, the nourishment of the subject of such affliction is bad. Any further constitutional influence does not seem to exist. He considers no constitutional or local treatment except amputation of any avail, and cites three cases, one by Hane, Hess and Glück, where both breasts were removed at separate times with success. Billroth also states that within his knowledge no observations have been made as to whether such hypertrophied glands return to their former shape and size if the person becomes pregnant and nurses her offspring after birth.

In sixteen cases operated upon, nine had both breasts removed, and one, aged only fourteen, had both breasts very large; one was removed and the other diminished in size after her catamenia were established. Six who had only one breast affected had that removed. All

the operations were successful except one in which the patient died on the fourteenth day with fever.

In conclusion, it would seem from this analysis that this disease develops mostly at the age of puberty, that nothing short of removal is of avail, and that only one case in sixteen died.

THE TREATMENT OF GANGRENOUS HERNIA.¹

BY GEORGE W. GAY, M.D.,
Surgeon to the Boston City Hospital.

THE CASES of gangrenous hernia which will receive attention in this paper illustrate four modes of treatment, to wit : The expectant, or do-nothing method, a very good one in its place; returning the bowel, and closing or leaving the wound open; making an artificial anus; and resection of the intestine. Which of these, or other methods, shall be selected in any given instance depends upon many circumstances, such as the kind and condition of the hernia, the age and state of the patient, and various other matters, which need not detain us at present. What to do with a bowel of doubtful vitality is one of those difficult questions which the surgeon is not infrequently called upon to decide at short notice. Individual judgment must determine whether it shall be returned to the abdominal cavity, or left in the ring, or excised; whether the wound shall be left open or closed. Written directions upon this subject are not quite satisfactory. Actual experience is the great teacher. The black, roughened, ash-colored, or ulcerated bowel of undoubted gangrene, is readily recognized. The very dark brown, or mahogany-colored ruptures are the doubtful ones. In cases of doubt it is good practice to reduce the hernia and keep the wound open with gauze, or some form of drainage, thus giving a ready exit to the intestinal contents, should one be required.

Time, and handling of the bowels, are very important elements in these operations, and are to be borne in mind, when deciding whether to make an artificial anus, or to resect the sphecelated structures. Most surgeons will require from forty-five to ninety minutes to excise the intestine, while an artificial anus can be established in a few moments. The ultimate result of the former method is infinitely preferable to the latter, but the immediate risk is greater. If the patient be in *extremis*, it would probably be better to save time by making an artificial anus, and trusting to the future for a closure of the same by nature or art.

The cases suitable for the expectant or let-alone treatment are limited to those, who are in the last stages of collapse. A patient with a cold, clammy, dusky skin; feeble, flickering pulse, or none at all; dull or stupid intellect, will hardly survive any operative treatment. While crossing the ocean some years ago the writer was asked by the ship's surgeon to see a man, who had a strangulated femoral hernia of several days' duration.

To look at the man one would not think that there was much the matter with him. He was quiet, conscious and comfortable. No pain, nor vomiting. All active symptoms had ceased. But he had no pulse at the wrists, and his extremities were cold. In other words, he was in a fatal collapse. Herniotomy was done and a recent, gangrenous knuckle of small intes-

tine was found imbedded in a mass of old, thickened, adherent omentum. Death took place in a few hours.

Several years since I was called out of town to see a man, who had a large, irreducible, scrotal hernia of many years' standing, which had become strangulated three days before. The lower part of the tumor was purple and cold, indicating that mortification had set in. Vomiting and pain had ceased, and the pulse was weak. He was calm, conscious and desired an operation. It was decided to make an effort to relieve the strangulation. The patient took the ether slowly and quietly, but before he was fully under its influence the bronchial tubes filled with mucus or serum from a rapid edema, and death took place at once.

It cannot be questioned that the fatal result in both of these instances was hastened by the operation, and that it would have been better to let them alone, as was done in the following case. An old woman was admitted to the City Hospital last year in a state of collapse from a gangrenous umbilical hernia of two days' duration. Vomiting, pain, delirium, dusky, clammy skin, followed by death in thirteen hours. It did not seem possible for any treatment to do her any good.

It is difficult to indicate upon paper, or even to determine at the bedside, in all cases, the degree of collapse that precludes an operation. My own experience would incline me to take pretty large risks under these circumstances. Much, very much, depends upon the manner in which these patients are managed. Time, animal heat, blood, the anesthetic, moving the patient, and manipulating the parts involved are important factors in the treatment. Briefly, it may be said that the patient should be warmly covered, moved as little as possible, in fact, when practicable, it is better that the operation should be done in bed. Only sufficient anesthetic should be given to deaden, rather than entirely remove sensibility to pain. The operation should be done as quickly as possible. Stimulants are to be given by the skin and rectum unless the stomach can be relied upon, which is seldom the fact during shock, however quiet it may seem to be. Absorption and assimilation are slow and unsatisfactory. Experience justifies the assertion, that, managed in this way, many desperate cases can be carried through an operation in safety. The following instance illustrates the fact.

Mrs. M., aged forty-seven, was admitted to the City Hospital in May, 1891. She was a large, fat woman with an umbilical hernia of five years' duration. Symptoms of strangulation had existed for sixty hours. Skin cold and clammy; pulse rapid and weak. She was restless, respiration was sighing, in short the collapse was very marked. The tumor was black at the apex and as large as the fist. A few whiffs of ether were given, and an incision was made directly into the bowel. The ring was enlarged, and the intestine secured *in situ* by sutures. The patient rallied fairly well, and although she had an attack of acute nephritis, yet she was much relieved by the operation, and lived seventeen days. She died from inanition, apparently due to the high location of the opening in the small intestine. About eight inches of the gut were gangrenous. At no time did the patient's condition justify any attempt at resection of the diseased tissue.

About a year ago I operated upon an old lady, a

¹ Read before the Surgical Section of the Suffolk District Medical Society, January 6, 1892.

patient of Dr. Edson's, who had a gangrenous inguinal hernia. She was extremely weak, vomiting, dusky skin, and feeble pulse. The bowel was laid open by a free incision, the constriction divided, and a poultice applied. She died in a few hours from shock.

Another woman, aged forty-five, was operated upon at the hospital last summer for a very large strangulated umbilical hernia consisting of omentum and intestine. The bowel was in a doubtful condition, but was finally returned. The omentum was cut off, and the ring closed by sutures. The patient only partially rallied, and died apparently from suppression of the urine, in forty hours. No autopsy was made, but there were no signs of extravasation or peritonitis.

Another case of doubtful condition of the intestine terminated more favorably. A woman, aged fifty-five, was admitted to the hospital in April, 1888, with a strangulated inguinal hernia of three days' duration; the rupture was a recent one. On opening the sac the bowel was very dark, but glistened, except in three or four small patches, which were ashy in color and very thin, as though all the coats, but the serous, were perforated. The bowel was finally replaced, as it was thought that the risk to her life would be less thereby, than from a resection of the gut. She was an extremely fat woman, and apparently had feeble powers of resistance. The wound in the sac was left open as well as the external one.

At the end of ten days, feces appeared in the wound and continued to be discharged for about a week. The wound was soundly healed in a month. The provision of a free outlet for the intestinal contents probably saved the patient's life.

The good effects of an operation under the most unpromising circumstances are well shown in a case recently treated at the hospital. A man, aged sixty-eight, was seen at the end of five days' suffering from a gangrenous inguinal hernia. Vomiting, hiccup, pain, delirium, dusky skin, weak, intermittent pulse were the symptoms. The rupture had only existed a week. The patient was not removed from the bed, but was surrounded with heaters, stimulated by skin and rectum. A very little ether was given, and an opening rapidly made into the intestine. No efforts were made to separate the gut from the sac, but a herniotome was passed into the bowel, the constriction was cut and the wound lightly packed with gauze. The operation occupied but a short time, and the patient suffered no additional shock thereby. The hiccup persisted for a week. In five weeks two-thirds of the feces came through the rectum. He was discharged from the hospital in very good general condition at the end of forty-one days. A little thin watery fluid came from the wound for some time after he went home. He returned to his business as a printer, although not able to do much work. The sinus has not yet healed, it being over four months since the operation was done, but he is able to be out and about. As a rule, the sinus does not give him very much trouble.

Two cases of resection of the bowel have come under my care; one recovered and one died. A woman, aged six, entered the hospital last June suffering from a large umbilical hernia, which had existed fifteen years. It was gangrenous and had been strangulated twenty hours. Sac contained a large mass of more or less adherent omentum, in the midst of which, was a knuckle of black intestine. The former was tied in

sections and cut off. Five and a half inches of the bowel were cut away with its accompanying omentum, the ring having first been freely divided to allow the bowel to be brought out into easy reach. The vessels having been tied, the mesentery was adjusted with a continuous silk suture. The bowel was closed by two rows of continuous silk sutures, one including the muscular coat, the other, a Lambert, involving only the serous layer. External wound closed.

Patient had some pain after operation. Bowels moved the next day, and also on the following day. Temperature rose gradually till the third day, when it was 103°. Some distension; delirium, pain, restlessness and prostration. Wound quiet; no abdominal tenderness. Sank and died on the fifth day.

An autopsy showed fecal extravasation at the junction of the intestine and mesentery, as is to be seen in the specimen here presented. It will be noticed that union seems to be firm and complete everywhere, except for about half an inch, as indicated above. Perhaps this patient would have done better had the wound been left open and packed with aseptic gauze.

The next case operated upon precisely the same manner, so far as the intestines was concerned, made a good recovery.

Mrs. K., aged fifty-five, entered the City Hospital October 16, 1891. She rode upon the front seat of the ambulance with the driver, although she had a large, gangrenous umbilical hernia of about two days' duration. She was pale, haggard, weak, pulse irregular and feeble. Vomited after admission. An enema of brandy and strong black coffee having been given, also a hypodermic injection of morphin, she was partially etherized, and the sac laid open. The inside of the sac was dark colored and contained about six inches of small intestine, which was black and mottled with grayish spots, indicating sphacelus. All of the intestine seen was covered with a layer of lymph. The destructive process extended about half way to the root of the mesentery.

The gangrenous tissues were removed with knife, and the bowel and mesentery united as described in the last case. Wound closed after approximating the ring with two strong silk sutures.

Notwithstanding the fact that this woman had a fibrous tumor as large as a child's head, and a considerable amount of ascitic fluid in the peritoneal cavity, she made a speedy recovery from the operation. The wound healed by first intention. The bowels moved spontaneously on the third day, and regularly afterwards. She had little or no pain, required very little medicine of any kind, soon regained and kept a good appetite. She left the hospital in five weeks in a most satisfactory condition. The wound was firmly healed, there was no protrusion at the navel, and the functions of the bowels were in a natural state. In other words, so far as concerned the hernia, she was well.

Patients in profound collapse from gangrenous hernia had better be let alone. If the prostration be too severe to allow a prolonged operation, an artificial anus may be established for a time, the closure of the orifice being left to future efforts of nature or art. If the condition of the strangulated parts be doubtful, they may be replaced, and the wound packed with sterilized gauze. Under all circumstances the constriction must be relieved, and a free outlet provided for all obnoxious matters.

THE MANAGEMENT OF GANGRENOUS HERNIA.¹

BY HERBERT L. BURRELL, M.D.,
Assistant Visiting Surgeon, Boston City Hospital.

WHEN an operator has exposed a loop of intestine which is lustreless, mottled with chocolate-colored blotches from having been caught in one of the abdominal rings, an imperative question arises of what shall be done with this threatened gangrenous hernia. When the intestine is perforated, the operator's course is much clearer than where a threatened perforation exists; for the presence of the perforation indicates that either the intestine must be resected, or attached to the ring, and an artificial anus established.

There are three methods to be considered: First, a return of the bowel to the abdominal cavity after freely dividing the ring, and packing the canal down into the peritoneal cavity with iodoform gauze; second, an immediate resection of the intestine; third, allowing the intestine to remain *in situ*, after division of the constricting ring, that its condition may be known as the case goes on. Placing doubtful intestines inside the peritoneal cavity has always seemed to me a source of danger.

Intestinal resection is a procedure attended by great risk in the length of time consumed and the shock added to the patient's condition, so that it has seemed to me that in the majority of cases it would be better to leave the intestine *in situ*, that its fate may be watched, that it may be outside of the peritoneal cavity, and thus danger of infection be minimized. I have had four cases of gangrene of the intestine, the details of which I will present:

CASE I. J. H., a healthy young man, entered the Boston City Hospital. For five years he has had an inguinal hernia on left side, which has bothered him a little, but it has usually been easily reduced. Yesterday, at 4 p.m., the hernia came down, and could not be put back. A good deal of force was used by a friend, who felt sure that he could reduce the hernia by taxis. In the left inguinal region there was a prominent tumor, extending into the scrotum. The testis formed the end of the tumor, apparently forced down under considerable tension. An incision was made, two and one-half inches long, over the hernial sac into the left lower abdomen, and nearly at right angles with the median line of the body. It was found impossible to reduce the hernia at this point, and a second incision was made at right angles to the first, over the hernia and down to the scrotum. The dissection was carried down until the sac was reached and opened. A piece of omentum, the size of the fist, protruded from the sac. Around this was a coil of intestine, seven or eight inches long, of a dark plum color. The ring was enlarged, and after considerable difficulty the omentum and intestine were replaced. The difficulty of replacing was due to the omentum being caught by the loop of intestine. The primary wound was diminished in size by sutures, and the wound was packed with iodoform gauze, leaving a direct channel to the peritoneal cavity. Operation lasted fifty-six minutes. The patient was in fair condition, having been vigorously stimulated.

Second day. Patient rather better to-day, and has no vomiting. Says he feels like having a movement of the bowels.

¹ Read before the Surgical Section of the Suffolk District Medical Society, January 6, 1892.

Third day. Patient much more comfortable, temperature nearly normal, and no pain. Sleeps well, and begins to have a good appetite.

Fourth day. Patient does not feel like having a defecation yet. Tongue has a whitish coat.

Fifth day. This morning the dressing was found soaked with fecal matter. The bowel has undoubtedly sloughed. (Later a distinct segment of the ilium came away, two and one-half inches in length, and including the lumen of the intestine.) The wound thoroughly irrigated and cleansed. Patient's condition much the same. Wound to be dressed every six hours, and thoroughly cleansed.

Sixth day. Patient very comfortable.

Seventh, eighth, ninth and tenth days. Patient in very much the same condition.

Twelfth day. Complains of a transitory bunch coming around the artificial anus, which gives him a good deal of pain. Wound has granulated remarkably quickly, so that it is nearly closed, and the drainage is not good. Could not introduce a drainage-tube, so stool sounds will be passed from day to day.

Thirteenth day. No discharge from abdominal wound.

Fourteenth day. Patient feels like having a defecation.

Fifteenth day. Patient had a chill at 2 p.m. Temperature returned to normal after a few hours, and the patient felt much better.

Sixteenth day. The patient received an enema, which brought away considerable feces. Since then he has had several dejections of formed feces, normal in appearance. Almost no discharge from the external wound, which is nearly closed in.

Eighteenth day. Chill at 5 p.m. All sutures taken out to day. Movement of bowels nearly every day.

Nineteenth day. The external wound has broken down again, and there is a great discharge of fecal matter. None by anus.

Twenty-first day. External wound still discharging. Has had very little feces by anus.

Twenty-first day. Has had a good deal of pain. Fistula still open and discharging.

Twenty-third day. All feces now by fistula, some wind passed by rectum.

Twenty-fifth to thirty-fifth day. Patient in very much the same condition, occasionally passing feces by abdominal wound, but usually per rectum.

Thirty-fifth to forty-fifth day. Patient's condition is much the same. He thinks he has gained a little strength lately, but there is no marked gain. Abdominal wound much the same.

Forty-fifth to fifty-sixth day. Patient in very much the same condition. Occasionally has sharp attacks of pain referred to the abdominal wound, and a coil of intestine can be mapped out at this point when the pain is severe. The patient's friends removed him from the hospital and from the city, and since that time I have been unable to keep track of the case.

CASE II. P. S., age seventy-two. The patient does not understand English very well, and cannot give an accurate account of himself. According to his own statement he has had a reducible femoral hernia on the right side five years. Three days ago began to have pain across the upper half of the abdomen and in the region of the rectum. He has not been able to reduce the hernia for three days, and has had no defecation. Has vomited repeatedly, and feels very sick.

An old, broken-down, poorly-nourished man. There is a tumor in the right groin about the size of a hen's egg. It is below Poupart's ligament, and is not reducible. The patient is pale, pulse weak, temperature about 98° , face haggard, tongue coated, seems on the verge of collapse. Moderate abdominal tenderness and distension.

The patient was put under primary anesthesia, and a nearly vertical incision, about three inches long, was made, and the hernial sac exposed. On opening it, a few drachms of sero-sanguinous fluid escaped. The intestine was found to be chocolate-colored, mottled in places and collapsed. The sac also contained a piece of omentum the size of a walnut. The ring was divided freely on the forefinger, the omentum reduced, the intestine was sewed to the abdominal ring, and an incision was made into the projecting loop of intestine. A small amount of feces escaped. A dressing was quickly applied, the patient was put to bed and actively stimulated with heaters. The operation lasted thirteen minutes.

First day. The dressing, when removed, was filled with feces, patient's condition is bad, pulse poor, extremely restless, temperature 99° . In the evening required restraint. Took nourishment fairly well. Discharge from the artificial anus free.

Second day. Patient failing rapidly. Did not rally under the influence of stimulants, and died.

CASE III. H. D. R., age sixty-eight. Patient has had a hernia for three years, which has given her little trouble. There has been extreme constipation. She was poorly developed and nourished. There is a tumor over the left inguinal canal about as large as a good sized plum, semi-fluctuating and very tender to the touch. Her abdomen is distended and very tender in the dependent portions on palpation. Pulse is very fair in strength and rhythm. Facies anxious, extremities cold, vomiting. Hernia has been down three days.

An incision was made over the tumor two inches long, the layers were dissected away, and the sac opened. A bloody fluid escaped, disclosing the intestine. The latter was glossy and here and there badly mottled. The finger passed up to the ring disclosed a tight stricture. This was divided with scissors. Adhesions were found to exist around the bowel as it lay in the inguinal canal. Stitches were taken between the bowel and the sac, and the bowel was opened. A certain amount of feces escaped, semi-fluid in character.

Second day. Wound looks well, less pain over abdomen, takes treatment well, no vomiting. Urine, albumen 1-8 per cent., acid, 1027, sediment, hyaline, granular, fatty casts, renal granular cells, fatty and granular renal cells, vaginal and bladder cells, blood and pus.

Third day. Much more comfortable, very thirsty, takes champagne and coffee *ad libitum*.

Fourth day. Much better, complains of some pain about the lower abdomen on having a passage from the artificial anus. Eats well. No especial discomfort. Dressing changed every six hours.

Fifth day. Shows a tendency to collapse. Pulse rapid and jerky. Still has pain on having a movement of the bowels.

Sixth day. Rather better. Complains of less pain, takes stimulants unwillingly. Bowels move regularly through the artificial anus. A large piece of bowel

has sloughed about two inches square. No hemorrhage.

Seventh day. Rather more pain. Controlled by morphine, pulse seems weaker. Extremities are not especially cold. Skin clammy.

Eighth day. Patient passed the night in a comatose state, pulse gradually grew weaker and extremities colder. Died soon after midnight.

At the autopsy, it was found that although the artificial anus had relieved the strangulation of the intestine, there was a twist in the ilium which rendered the greater part of that portion of the intestine gangrenous (a distance of about eight inches). It was perforated at two points, and feces had escaped into the peritoneal cavity.

CASE IV. J. S., a strong, healthy adult, age twenty-eight. Has had a right inguinal hernia for three years. Has never worn a truss. Five days ago, while lifting a bale of cotton, felt the hernia come down, was unable to reduce it, and has applied for assistance to two physicians who declined to treat him, and advised him to enter a hospital. Has been in intense pain. The abdomen is distended, is vomiting a coffee-ground-like material. Temperature 100° , pulse 130, small. Tongue dry and brown, very thirsty, extremely anxious. The danger of his position having been explained to him, he was put under light anesthesia, and an incision was made down to the intestine. A gangrenous loop of intestine, probably a portion of the ilium, was found glued in the hernial sac. The ring was divided freely, and the intestine remained *in situ*. An incision was made into the intestine, and a large amount of fluid feces escaped.

Operation twenty-five minutes. Patient put to bed with heaters, subcutaneous injections. Seen at the end of three hours, at which time he was comfortable with a temperature of 99° , pulse 140.

Second day. Patient has discharged an enormous quantity of feces from the opening. The abdomen is less tympanic, temperature 101° , has considerable pain in the abdomen, has vomited three times, but retains some champagne. Discharge of feces from artificial anus good, wound is looking well.

Fourth day. Retains nourishment, has had a small defecation from rectum.

Fifth day. Temperature normal, vomiting has ceased. A large defecation from rectum. Wound looking very well. A piece of intestine about an inch square separated.

Sixth to ninth day. Patient doing well, wound closing rapidly.

Fifteenth day. The wound was closed to about the size of a lead pencil. There was obstruction to the discharge of feces and it was found necessary to introduce a drainage-tube, which gave the patient a great deal of relief.

Forty-second day. The wound had closed completely, the patient was having normal movements. The patient was seen two years later at which time he had suffered no inconvenience from the operation, and considered himself cured. Wore a truss constantly, and has a distinct impulse under the scar tissue.

I have never attempted to do an intestinal resection for gangrenous hernia, and have always felt that it was a hazardous undertaking, and that it would be better to establish an artificial anus, and if the patient recovered to do a secondary operation and resect the intestine at one's leisure. The first case is extremely

interesting, for there was but little in the patient's condition after operation to indicate the sloughing of the intestine after it had been replaced in the peritoneal cavity. The sloughing of the intestine, and the discharge of feces, occurred the fifth or sixth day, and by this time the intestine must have been walled off from the peritoneal cavity. This wall of inflammatory material, as thrown out, must have been a protection to the general peritoneal cavity, but the packing of the wound as carried out in this case has seemed to me a matter of a great deal of importance, in that it allowed a free exit for the feces. The chills which he had were apparently associated with a diminished discharge from the artificial anus. For weeks I stood ready at any time to do an intestinal resection, upon the slightest failure in the patient's general condition, but at no time did the symptoms seem severe enough to indicate that course. When he left my care he was apparently on the road to recovery, and the outcome of the case will be one of great interest.

In the second case the patient was an old, broken-down, poorly-nourished man, with a gangrenous femoral hernia, and on the verge of collapse. The operation was a desperate measure, and can only be said to have relieved the acute suffering.

The third case seems to me to demonstrate the advisability of thoroughly exploring the canal, and drawing out a loop of the intestine to determine how far the gangrenous process has extended. Unless this is done and the intestine is allowed to remain *in situ*, one, at times, will be deceived by gangrenous intestine remaining in the peritoneal cavity.

The fourth case was successful, from the fact that he was a vigorous adult. The closure of the intestine after a separation of a slough of an inch square has seemed to me a matter of importance, particularly when it is considered that two years later the patient was seen and expressed himself as free from all symptoms which would indicate the formation of a stricture of the intestine.

I will attempt to formulate, for the purposes of discussion, the ideas I have formed from a consideration of these cases.

Questionable gangrenous herniae should be treated either extra-peritoneally or by immediate intestinal resection. Whether to treat a gangrenous hernia extra-peritoneally or by resection must depend entirely upon the individual case, and the following factors should be considered:

(a) The general condition of the patient.

(b) The age of the patient.

(c) The length of time the hernia has been constricted. [This in relation to the probable time at which the intestine will give way, and the extravasation of feces takes place.]

(d) The circumstances under which the operation is performed, whether the surgeon is ably assisted.

(e) The portion and amount of intestine involved; for in some instances where an artificial anus is established high up in the intestinal track the patient is practically starved to death.

The management of a gangrenous hernia requires prompt and accurate judgment, founded on a large experience, and it is only by carefully formulating our ideas that we can meet the emergency with intelligence.

THE port of Santos in Brazil is still infected with yellow fever.

Clinical Department.

A CASE OF INTESTINAL RESECTION AND SUTURE FOR ARTIFICIAL ANUS FOLLOWING GANGRENOUS HERNIA.¹

BY MAURICE H. RICHARDSON, M.D.

RAYMOND S., aged twenty-two, entered the Massachusetts General Hospital on Tuesday, October 1, 1891. About ten years ago he noticed a lump at the upper end of the scrotum on the right side, which would disappear only on lying down. Sometimes, after remaining down for quite a little while, the lump would get hard and painful. Nothing was ever done for it. On the 19th of June, 1891, he was taken with a sudden pain in the stomach. The tumor grew much larger, and he began to vomit almost immediately. The pain soon became so severe that the attending physician, Dr. Woodworth, of Canard, Nova Scotia, was sent for.

Dr. Woodworth first saw him at about eight o'clock on June 19th, and found him suffering from an obstructed hernia of a few hours' standing, which had come on while striking at a ball. There was a tense tumor in the right scrotum, and suffering was severe. Chloroform was given and taxis carefully tried, without success. A consultation was called, and fresh attempts made at reduction. There was no vomiting, and there were no constitutional symptoms. After local application of cold, taxis was again tried under chloroform, without avail. On account of the absence of constitutional symptoms and other evidence of obstruction, operation was postponed. Meanwhile, cold applications were continued.

Swelling increased in the region of the tumor until the penis was so involved that it was necessary to use a catheter. The temperature was never above normal except once, when it stood at 99.5°. Cold was applied for sixty hours without reduction. The lower bowels had been opened freely, and strength was well sustained. In about a week a soft point was noticed over the hernia in the lower part of the scrotum, and soon fistulae formed at this point with the escape of feces, and, in the course of the following week, there escaped some ten or fourteen inches of intestine. During this time the pulse never exceeded 90 and the temperature was normal. He often had quite free movements and declared that blueberries, which he ate while in bed, passed by the rectum. From this evidence, it seemed to the attending physicians that the alimentary canal was not entirely cut off, and it seemed unaccountable to them that the constitution should be so little affected by all the local suffering and disease. On his recovery of the immediate effects of the strangulation, he was sent to the Halifax Hospital, where, on every second day, or thereabouts, he would have a passage of feces through the natural channel — sometimes from a warm water injection, but more often without anything. After being in the hospital for some time, he was removed to another, smaller hospital, where one of the abdominal openings was enlarged.

At the time of his admission to the Massachusetts General Hospital, he was passing gas and some fecal matter by the rectum. As long as the fistula remained open he suffered no pain. On examination, the right inguinal region was found riddled with openings through

¹ Read before the Surgical Section of the Massachusetts Medical Society, January 6, 1892.

which fecal matter almost constantly escaped. The right testicle was drawn up nearly into the external ring. The skin was infiltrated, edematous and red, and there was considerable inflammation in the adjoining parts. His discomfort was so great as to be quite unbearable and life hardly worth living. He spent all his time in bed, wiping up with cloths the discharges which were constantly escaping through the numerous fistulae.

After a careful study of the case, in spite of which it was impossible to make out definitely the condition of the bowel ends or the direction of the sinuses, it was decided best to attempt the restoration of the alimentary canal. The history and physical examination made it quite apparent that the bowel had sloughed to a greater or less extent, but it was impossible to say that there was not still existing some communication to account for the occasional passage of feces by the rectum. The foul condition of the parts was so marked that it seemed unduly hazardous to open the abdominal cavity through the sinuses. There was no improvement in this respect, however, after constant and prolonged daily efforts at cleanliness, both on the part of the nurse and of the patient. The operation was planned with especial reference to the necessarily foul condition of the parts and the great danger of infecting the peritoneum. My hope and intention was to lay open the numerous sinuses by one long incision, curette them, and by some means to establish a communication between the upper and lower segments of the bowel from their interior. On exposing the external ring, I found two constricted openings side by side, into both of which it was quite feasible to introduce the index finger. Both segments were adherent to each other and to the surrounding parts. In separating the adhesions between the bowel and the abdominal wall for the purpose of making an anastomosis between the adherent segments, the peritoneal cavity was opened. During these manipulations several ounces of fetid pus welled from below the ring and apparently polluted every part of the wound, including the prolapsed healthy intestine. The chief objection in this case to resection and suture had been the danger of infecting the abdominal cavity by the foul discharges of the sinuses and the septic condition of the parts. The force of this objection was lost in separating the adhesions, and I determined at once to make a complete resection of the exposed ends. About two inches of bowel were cut off from each end with the scissors, together with a wedge-shaped piece of mesentery. The bowel ends were held by assistants while interrupted Lambert sutures were applied in a single row, both to bowel and mesentery. The joint seemed very perfect and satisfactory. The bowel was then returned to the abdominal cavity and kept directly under the abdominal wound by means of iodoform gauze, which was placed just in contact with the line of suture throughout its whole extent. It will be seen that the approximated bowel ends and sutured mesentery were everywhere protected with gauze, and that the line of suture was everywhere provided with gauze drainage in case one or more sutures should give way. The external wound was also packed with iodoform gauze and aseptic dressing of cotton tightly swathed outside the whole. During the operation there was frequent and thorough irrigation with warm water. The time of the operation was one hour; of applying the suture twenty minutes.

On the following day the patient was in a remarkably good condition, bright and cheerful. On the second day he passed gas through the rectum for the first time since June. On the sixth day he was put on extra diet. He had a large movement of the bowels, and said he felt "first-rate." The wound was clean and granulating. The gauze was taken out, little by little, until November 12th, when it had been almost entirely removed. The wound was granulating, with still some slight redness and induration about the margin. On November 15th the last piece of gauze was removed and the wound much closed up. On December 11th, the wound was perfectly solid, and the patient felt perfectly well in every way. The bowels were moved nearly every day. He was transferred to Waverley, and has remained well ever since.

This case seems to me to be of value from the fact that the foul condition of the wound did not infect the peritoneum, and that it was possible to go through the manipulations of an extensive operation without ill results attending. The foul condition of the parts in this case led me to select a method by which, if possible, the peritoneal cavity could not become infected. The only way in which this could be done was to make an anastomosis between the proximal and distal ends of the intestine by working from the interior. The success of this procedure would depend obviously upon adhesions between their peritoneal surfaces. For, in the absence of such adhesions, it would be impossible to establish a safe communication by any imaginable method of intestinal suture. Careful attempts in this direction were followed by separation of adhesions and exposure of the peritoneal cavity. It would have been impracticable to establish satisfactory communication in this way, and I believe valuable time was lost in attempting it as a preliminary measure. Even if successful, it does not follow that the sinuses will become closed, nor that the anastomoses will remain permanent or efficient.

When the peritoneum has become thus exposed to the danger of infection, we must choose between anastomosis and end-to-end suture. The latter method I believe to be better, because it seems to me quite as quickly applied, and as secure, while there is practically no danger of stricture. The great danger in both methods is from giving way of the stitches and fecal extravasation. By applying gauze to the line of suture this danger is reduced to a minimum, for such good drainage is provided that nothing more than a temporary fistulous track is likely to remain.

THREE CASES OF THE SEPARATION OF THE EPIPHYSIS AT THE HEAD OF THE FEMUR.¹

BY E. H. BRADFORD, M.D.,
Visiting Surgeon, Boston City Hospital.

THE following cases are reported on account of their rarity:

CASE I. A boy, seventeen years old, fell from a window striking upon a shed of the story below. He was brought to the hospital with symptoms suggesting a fracture of the right limb. On examination, however, no fracture was found at the leg or of the thigh proper. The limb was held in a position of eversion and was slightly shortened, but no injury was discovered below the trochanter, which rotated on twist-

¹ Read at the Surgical Section of the Suffolk District Medical Society, January 6, 1892.

ing the leg. On examination under an anesthetic, abnormal mobility and a cartilaginous crepitus was determined between the head of the femur and the trochanter. The trochanter was higher on the affected than on the other side. The diagnosis of separation of the epiphysis was clear as the symptoms pointed to a lesion in that part and union of the epiphysis does not take place until the eighteenth year.

CASE II. A healthy boy, sixteen years of age, reported himself for examination with the following history: He had been perfectly well, and had not been lame. On attempting to milk a cow, seated on an ordinary milking-stool, he was kicked at by the cow and turned quickly to avoid a blow, suffering a sensation of sudden pain. Immediately after this he was unable to step and was taken to the house, being obliged to remain in bed several weeks.

He was etherized and the limb, which was flexed, painful and useless, was put into position, and made a recovery, but he was able to walk about only with crutches for some time. At the time of examination, three months later, he walked with crutches and could walk without, but with marked lameness. He suffered no pain. An examination showed that the affected limb was shorter by an inch than the fellow. The trochanter was above the Nelaton line to that extent. The motions at the hip-joint were perfectly free, with the exception of inversion, which was not possible beyond the right angle. It was entirely free on the other side. The patient was perfectly well and had not been lame before this accident.

CASE III. A child, seven years old, of fairly good health, but of imperfect assimilation, sustained a fall from the window in the first story. The patient was taken up, placed in bed, and complained of great pain; but no injury of the limb was determined at the time. The child was of a nervous type and it was thought that her symptoms were due to fright rather than to any injury to the bone. She remained in bed for several weeks, finally was able to get up, and after a while to walk, though she still limped. Upon examination, four months after the accident, it was found that the head of the trochanter was half an inch higher on the right, the affected side, than normal. The head of the trochanter was also placed more posteriorly than is normal, and the foot everted. The motions at the hip-joint were free, with the exception of the inversion which was not possible beyond the vertical. The patient was free from pain and able to walk. A rotation of the thorax had taken place in the four months and the ribs on the right side projected.

Cases of this lesion would appear to be quite rare and the diagnosis is not so easy as might at first be imagined at the time of the accident, unless an anesthetic is used. The shortening, though present, is not always recognizable except on careful measurement, and that is not easy in a patient in a sensitive condition. No fracture can be determined by ordinary palpation, and it would appear that slight motion of the limb is sometimes possible, though accompanied by pain. An anesthetic is needed to establish a diagnosis with accuracy in a fresh case.

The symptoms of pain in the separation of the epiphysis are often not greater than what is seen in cases of synovitis of the hip-joint following severe injury or sprain, and unless the patient is anesthetized, the actual condition of things might not be recognized.

In the last edition of "Hamilton's Surgery" (revised

by Smith) one case of supposed separation of the epiphysis is mentioned by Smith, who also quotes in the literature, five cases of separation of the epiphysis, one in a boy of ten, another in a girl of sixteen, another in a boy of fourteen, and two in children of fifteen, the sex not being given. It may, therefore, be assumed that the accident is not a common one. Smith also collected eighty-four cases of fracture of the neck, with the youngest at an age of twenty-nine years. Hyde² collected sixty-one cases fracture of the neck, the youngest being nineteen years of age. As the epiphyseal union is said to take place at the head of the femur at the age of eighteen, this case of Hyde's should probably be classed as a fracture.

The treatment of this condition where it is recognized is, of course, simple. It consists in the ordinary treatment of a fracture, and prognosis is, of course, unusually favorable. Where the condition is not recognized, and a union has taken place, with the resulting deformity, operative interference — osteotomy of the neck of the femur — has been performed by Professor Hoffa, of Wurtzburg, with success.

It would seem that the operation is not a dangerous one, and recommends itself in all cases of marked deformity as a means of curing the disfiguring limp.

In addition to the previous cases the following deserves mention in this connection as a fracture of the neck in a comparatively young person, the patient being younger than the youngest case of Smith, though older than the youngest of Hyde's cases.

The patient was a woman, twenty-two years of age, a Swede by birth,³ and of excellent health and strength. She fell twenty feet. Was unconscious two or three hours, and was brought into the hospital two days later. Examination was made under ether by Drs. Gavin and Burrell and the following symptoms were noted: The left leg was found from half to three-quarters of an inch shortened. There was slight inversion, inability to raise the heel, no deformity, abnormal mobility and marked crepitus at the position of the neck of the femur. The patient was treated by a Buck extension, and made a perfect recovery with no appreciable shortening.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDEER, M.D., SECRETARY.

REGULAR meeting, Wednesday evening, January 6, 1892, DR. A. T. CABOT in the chair.

DR. GEORGE W. GAY read a paper on

GANGRENOUS HERNIA.¹

DR. M. H. RICHARDSON reported a second successful case of

INTESTINAL RESECTION AND SUTURE FOR ARTIFICIAL ANUS FOLLOWING GANGRENOUS HERNIA.²

DR. E. H. BRADFORD: My experience consists of three cases of gangrenous hernia, all fatal. I will not

¹ See page 207 of the Journal.

² See page 211 of the Journal.

¹ New York Medical Record, 1875.

² City Hospital Records, vol. 202, p. 82.

give the details any further than that the first was treated by the formation of an artificial anus, and the patient recovered from the operation, and died of starvation, owing to the short distance of the anus from the pylorus. The second was an elderly lady over seventy. The hernia was found to be gangrenous, and no intestinal suture was made, but the gut was brought to the wound and stitched. The patient died a day after the operation. Third was a case in which resection of the intestine was done, and the patient recovered from the operation. The ordinary steps of the operation as mentioned were performed. Three days later the patient died. At the autopsy it was found the intestine had united perfectly with no leakage, but the patient had died from vomiting. It was found that the lumen of the intestine was too small. This was an accident in the technique which had not been foreseen.

In regard to the treatment of gangrenous hernia, I suppose we are all agreed that in case the patient has strength to warrant it during the operation for gangrenous hernia, resection should be done. In patients who are exhausted, an artificial anus would be preferable.

DR. H. L. BURRELL read a paper on the

MANAGEMENT OF GANGRENOUS HERNIA.⁸

DR. A. T. CABOT: The cases that have occurred to me have really been ones that have had very little interest in connection with this discussion. Two of them were almost moribund at the time of the operation. They were both of them internal strangulations with large extents of intestine gangrenous, all the way from three feet in one case to twenty to twenty-five inches in the other. In those, of course, the only thing to do was to bring the gangrenous intestine outside of the abdominal cavity, and hope for an artificial anus. In neither case was that successful, because the patients had not the strength to rally from the condition.

The third case was interesting as being one in which the gangrene had just succeeded in opening the bowel when the sac was opened. It was a small femoral hernia, a little knuckle of intestine. The sac was a double sac often seen in the femoral hernia. There was a little opening about as large as the point of a lead pencil allowing a little spurt of fecal matter to appear. The patient's condition was so bad that it seemed unwise to attempt a suture of the intestine. It seemed as if in that case it would be unsafe to simply relieve the constriction and leave the intestine *in situ*, because it was so likely to escape from its attachment to the ring and fall back into the peritoneal cavity and discharge its contents; consequently a stitch was passed somewhat as in doing Littré's operation for artificial anus in the groin. On incising the constriction there was a very large escape of fecal matter. The constriction was entirely relieved, but the patient had not the strength to rally, and lived only a few hours after the operation.

I speak of that case mainly as being an illustration of one kind of case in which it did not seem to me safe to simply leave the intestine *in situ* and relieve the constriction, but where it seemed necessary to attach the intestine in its position so that it should not escape and discharge its feces internally.

My feeling in regard to the kind of operation which should be done is, I think, exactly in accord with what

has been expressed this evening by almost every gentleman, that is, that if the patient's strength permits of it, circular enterorrhaphy and return of the intestine to the abdominal cavity would be the course to pursue. It seems to me that that proceeding carried out in Dr. Richardson's case is an excellent one in these cases to prevent the possibility of trouble from the stitches giving way, that is, to provide for drainage by packing gauze down to the wound in the bowel. If the stitches do not yield, the opening very quickly closes, whereas, if they do yield, it is of the greatest importance to allow the escape of feces.

I think I have never done the operation of enterorrhaphy for a gangrenous hernia. It seems to me that the circular operation which was done and described by Dr. Richardson is the best in these cases, although a good many operators are in favor of sewing the two ends of intestine up, closing them quickly and then performing lateral anastomosis with Senn's plates, Abbe's rings or some contrivance of that sort. It seems to me that the result of all of the intestinal sutures I have seen at autopsy have been such as to encourage me to try to establish a union more as nature does it, that is end to end rather than side to side, as this method with Senn's plates; and, as I have seen it done, it certainly has seemed to take very little if any more time. Dr. Halsted claims that he is now able to do circular enterorrhaphy in what is practically only a few minutes. With a little practice I think that operation can be done nearly as quickly as the other, and is preferable in establishing a state more nearly approaching the physiological one.

DR. C. B. PORTER: I came to listen rather than to speak to-night, because I have had no opportunity to prepare anything in detail. My house-officer has sent me a copy of the notes of two cases which have been years ago reported here. I should like to speak of them, not going into the detail of the whole clinical history of the case.

I think that I did the first intestinal suture done in Boston, in 1883, in a woman about sixty years of age. Previous to that she had been operated on for strangulated right inguinal hernia, eight inches of intestine removed, and an artificial anus formed. She entered the hospital, and was under care of Dr. Homans, who operated on September 12th of that year by refreshing the edges of the artificial anus and endeavoring to close it in that way. That closure was successful for a few days, but broke open in about a week, and the patient's condition was the same as before. I operated by uniting a number of fistulous tracts which discharged feces and pus, and, exposing them all down to the ring, opening up the ring, releasing the intestine from its attachments and bringing out the intestine entirely free from any attachments except those of the mesentery into the wound, and found that there was an artificial anus or two opening into the gut, one in the large and the other in the small intestine, and close to each other at the ileo-caecal connection. I united those, and found the larger part of the wound was in the large intestine, and it was a question of how to adjust that to the small intestine. I made a longitudinal incision on that surface equidistant from the mesentery so that the wound of the small intestine would correspond to the size of the wound in the large intestine, and approximated them with — Lambert stitch. There was no mesentery taken away. The wound was brought edge to edge. The abdominal

⁸ See page 269 of the Journal.

wound was then closed, the intestine with the suture being dropped back into the abdominal cavity. The patient made what would be called an uninterrupted and uneventful recovery, except that the record states that about three weeks after the operation when there had been normal dejections for some time, some fetid pus came from the wound with a fecal odor. There was no artificial anus, however, reformed, but the wound had closed entirely and it was only because the pus in close relation to the intestine produced the odor; and she was discharged from the hospital two months and a week after the operation, well. She lived a number of years, and died at the Cambridge hospital; and Dr. Gray, then the surgical interne, made the autopsy and sent me the specimen which was given to Dr. Whitney for an examination, and it was impossible to say from the looks of the intestine where the sutures had been passed.

About a year after this operation, when called to Lynn in consultation to see another case, I was asked, while waiting for the train, to see a man who had an artificial anus from gangrenous hernia, and to see whether anything could be done. I found this man in the condition in which all these cases are, but he was if anything more lamentable than many. He was lying in bed, and he had devised something which he had fitted to the side to catch the feces, otherwise he would have lain in a puddle of feces. His statement was that he rather die than go on living in that way. He came to the hospital and was operated on in the same way, and with perfect success, the intestine being dropped back into the wound; and I cannot say whether the wound was closed or not, but the recovery was uninterrupted, and he gained very rapidly in his general condition.

I did not hear Dr. Gay's paper, but Dr. Scudder in writing to me to know whether I would discuss the paper informed me that Dr. Gay proposed to consider five different methods of procedure in connection with gangrenous hernia: (1) Making an artificial anus. (2) Opening the sac. (3) Dividing the constriction and leaving the intestine *in situ*. (4) Resecting the bowel. (5) Leaving the patient alone.

Most of these points have been considered by the different speakers. It seems to me there are two points in which there should be no doubt whatever, and that is that an artificial anus should be established, that is, opening of the gut, and that the constriction should be divided. I think those two rules would hold good in regard to every case of gangrenous hernia. I can see no reason why the sac should not be opened when the constriction is divided, and it seems to me that it would be very much better in order to anchor the gut in such a manner that it could not escape back into the abdomen.

With regard to excising of the bowel, I think each individual case would have to be decided on its own merits at the time, and the manner in which Dr. Burrell put it, it seems to me, is such that we could all accept his statements with regard to it. I believe myself, however, that the making of an enterorrhaphy at the time is in nearly all cases unwise. There are few cases of obstructed bowel that would come to the condition of gangrene that are in a condition to undergo the protracted operation, and in the light of the number of most excellent results that have been obtained by the closing afterwards of the artificial anus left from such condition, it would seem wiser under those circum-

stances to leave enterorrhaphy for a later operation to be determined by the condition of the patient. Few can obtain, except by experiments upon animals, the rapid technique to enable them to suture the intestine. It is certainly a very nice operation to do properly, and many of the fatal results after such an operation are due to the faulty technique, and every one who has tried to suture the intestine recognizes the fact that at the mesenteric border it is very difficult to adjust the suture, and those who have had experience, it seems to me, always adjust those sutures first in order to feel sure that they have been properly placed.

I should say in regard to the return of the bowel to the abdominal cavity that I should be always against it in gangrenous hernia. I think it should be retained in the wound and an opportunity for a free discharge of fecal matter made.

With regard to leaving the patient alone, I should think it was a simple question whether the patient was in *articulo mortis*. I should say the patient should have the benefit of free opening and the relief of the constriction, because the relief of the constriction takes away a great deal of that shock which follows upon any constriction of the gut or the omentum. I think that every one who has had occasion to operate upon any hernia where the omentum has had to be tied off has felt that the shock to the system from the ligation of a considerable portion of the omentum in order to get rid of it, and to drop the pedicle back, is the source of the greater part of the shock during the operation. I have operated a number of times for the cure of large omental herniae where they were adherent, and where it was necessary to tie off a very large portion, and the shock of the operation has been to my mind mostly due to that, so that it seems to me that the patient should have the benefit at least of a temporizing operation making an artificial anus and relieving the constriction.

Dr. E. W. CUSHING: I should like to hear some discussion regarding the cases which are not exactly gangrenous herniae, but where the surgeon is called upon to decide whether the intestine still retains its vitality and should be returned. It is of great importance to know if the intestine can be returned at once, since recovery is much more rapid, and the necessity of a prolonged operation is avoided. I hoped to hear something in regard to diagnostic data which would enable one to decide that point. In a large number of cases the character of the bowel is extremely doubtful. I have seen cases returned which I thought had lost their vitality, and which did perfectly well. Other cases which did not seem to be dangerously affected were returned with disastrous results. It is a condition which I have found at times quite difficult to decide.

Dr. J. C. IRISH: I have never made the operation of resection of the intestine, for the reason, that, since that has become an established mode of practice, I do not know that I have seen a case of gangrenous hernia. The portion of intestine involved in gangrenous hernia I believe plays a very important part in the subsequent course after operation. In connection with that I recall a case I saw in consultation with a physician who had opened what he supposed to be a suppurating inguinal gland, and to his horror he found that he opened into the intestine. There was a large discharge of feces through that opening, and an artificial anus remained for a time, but finally feces passed by the rectum, and the man made a

spontaneous recovery. While usually it is the small intestine that becomes strangulated in hernia, still in this case and in others that recover in a similar manner, it is probably the colon that is involved.

Two cases that I have seen of gangrenous hernia, one in my own practice and one in consultation, were cases in which, when the operation was made, whether the intestine was gangrenous or not was doubtful. In these two cases the intestine was returned. In one case the patient died very soon after from septic peritonitis; and in the second case, some twelve days after the operation, the external wound being completely closed, with no drainage, feces appeared at the wound, and the patient, who had without doubt fecal extravasation into the abdominal cavity, went along for some two or three months, with the entire discharge escaping through the opening, and finally died of exhaustion.

Now the suggestion of Dr. Richardson to resect and to leave the wound open and pack with gauze to act as a drainage, in case of failure, would not leave the patient in any worse condition probably than exists in some of the cases of artificial anus. There is perfect vent for the discharge; and the fact, too, that even extravasation of feces into the abdominal cavity is not necessarily fatal, together with the hope of complete cure to the patient, instead of artificial anus, would lead me to believe that suture of the intestine is the wise procedure in all those cases where the general strength of the patient would admit of so long an operation as that of resection and suture.

DR. M. H. RICHARDSON: I looked upon this subject as one of very great practical interest. I do not agree with those who say that no cases of gangrenous hernia are suitable for excision and suture. No one would think for a moment of performing the operation of anastomosis or of resection and suture in a very feeble patient; but in those not infrequent cases with a history like that of the patient whom I have just exhibited, and like the case of successful resection and suture which I reported some years ago, where the strength is good and the general condition satisfactory, — in such cases there is no good reason why the comparatively short operation of resection and suture or of intestinal anastomosis should not be performed. Up to two years ago the death-rate in intestinal resection for gangrenous hernia was about fifty per cent. I do not think that the mortality is any less than this by any method of treatment; but there is no doubt, I think, that this percentage of recovery is too high, for the obvious reason that more successful cases are reported than unsuccessful. The mortality depends largely upon the time essential to the proper performance of the operation. If we select either intestinal anastomosis or resection and suture, or even the comparatively rapid procedure of artificial anus formation, in all these operations so much time is necessary as seriously to endanger the life of a very feeble patient. In the latter operation — the formation of an artificial anus — it is necessary to sew the cut ends of the bowel into the wound so securely that there will be no danger of giving way, and so neatly that there will be no extravasation into the abdomen; in other words, you have a quite prolonged operation and one that cannot safely be resorted to upon a patient *in extremis*. In such serious cases simple excision of the gangrenous bowel and enlargement of the ring seems to be the only justifiable procedure, but even this operation is not free from the danger of infection through the incised

ring. I certainly do not differ materially from the opinion expressed by every one this evening when I advocate excision of the gangrenous portion of bowel and immediate closure, either by anastomosis or by end-to-end suture, in those cases where the patients are young, in good or fair condition, and presumably with good powers of recuperation. By simple incision of the sac and palliative treatment we not only do not avoid great present danger, but we leave the patient to undergo the risks of subsequent attempts at closure, to say nothing of the menace to life and discomforts of constant fecal escape in the meantime. As I stated two years ago in Washington, I believe now that the combined dangers of two operations are as great or even greater than the dangers of one radical operation. Now, in the case of the young man whom I show tonight, at the second operation the danger from extravasation of feces into the abdominal cavity was surely as great as it would have been if the operation had been performed at the time of the original strangulation. There was quite as much danger of infecting the abdominal cavity from the unclean condition of the parts as at the time when the sac was filled with gangrenous contents. Therefore, the danger of infection being practically the same at both times, there is no valid reason why the radical operation for restoring the intestinal canal should not have been done in the beginning, provided his strength was sufficiently good. This patient certainly has been twice exposed to the gravest danger.

I am very glad to hear Dr. Cabot say that he believes the end-to-end suture is better than anastomosis. I have long been of that opinion, although having no experience with the latter operation. The first objection to circular enterorrhaphy is that there will be subsequent constriction. Dr. Porter's two cases reported some years ago show that this is not the fact. In one of these cases the autopsy, performed some years after the operation, showed no diminution whatever in the intestinal calibre. The history of my first case, which I followed until her death from cancer of the uterus, showed that there was no obstruction, and in the present case there is none. Nor in any of the cases with which I am familiar has there been any subsequent constriction, early or late.

In comparing the time consumed by the different methods, I do not believe that intestinal anastomosis properly performed is substantially a more rapid procedure than circular suture. In the one case it is necessary accurately to sew up the two open ends of the intestine, to incise and to apply the plates, and in some cases to add a line of accessory sutures. End-to-end suture does not require more than twenty minutes for its application after the bowel has been excised. I do not speak from personal knowledge of the technique of intestinal anastomosis, but from my experience with end-to-end suture I must say that there can be no more beautiful operation in surgery than the rapid and neat approximation of bowel ends when brought together by the interrupted Lembert method.

Another and very important reason for establishing continuity of the bowel at once is the fact that the small intestine, high up, may be the part involved, and the formation of an artificial anus would result in death from inanition. It is always easy to recognize the large intestine, but it is very difficult, if not absolutely impossible to tell what portion of the small intestine is involved.

My first case, which was fatal although the joint healed, took an hour for the performance of resection and suture, but the actual closure of the intestine did not consume more than twenty or thirty minutes. In the second case, which was successful, the whole operation was fifty-five and the suture between twenty and thirty minutes. The last operation took an hour, but the greater part of the time was occupied in finding the ends and in trying to approximate them so as to make an anastomosis.

In considering results we must bear in mind that the mortality is necessarily large in all methods of treatment, even in those cases which have been reported this evening, where death has followed the formation of an artificial anus, and that the constitutional effects of prolonged strangulation are in themselves extremely grave.

The method which I have described, and have employed in my last two cases of intestinal suture obviates one of the greatest dangers of the end-to-end method. I refer to the application of gauze to the line of suture. By this method I think there is little or no danger of a general peritonitis from extravasation. I have found in operations for appendicitis, in intestinal resections, cholecystotomies, and in laparotomies generally that adhesions are formed and the general peritoneal cavity shut off from the line of gauze very quickly. I have noticed that the fibre of the gauze is impressed almost immediately upon the peritoneum, and it apparently has some irritating effect. If the stitches do give way, we have not only the abdominal cavity shut off but an excellent drain provided. There is no danger of a permanent sinus, for we have still the greater part of the stitches holding. At most a small fistulous channel may remain precisely as is seen after excision of the appendix. The escape of feces may last for two or three weeks, as I have observed time and again in operations upon the vermiciform appendix. Sooner or later the faecal discharge ceases.

I think the subject is a very important one, and I have often been in doubt as to the proper method to pursue in a given case. I believe that the best method to pursue in a case of gangrenous hernia, where the patient is in fair condition, is at least to give him the benefit of a free incision with relief to the ring and the formation of an artificial anus. If everything is favorable as to surroundings and assistants, and the patient's condition is good, I should favor immediate excision of the gangrenous portion of the intestine with the end-to-end interrupted suture of Lembert.

Dr. C. B. PORTER: I think Dr. Richardson misunderstood me. I did not say that I thought that in no case of gangrenous hernia should an enterorrhaphy be done at the time. I said I thought that in nearly all cases where the intestine had been down long, if they are subjected long enough to pressure to produce the gangrenous condition, the patient was not in a condition to warrant that procedure at that time. I do not think Dr. Richardson can recall many cases of gangrenous intestine where there has not been great shock and great prostration and usually pretty marked collapse. That is the ground that I put my objection to the immediate enterorrhaphy on.

He speaks about the end-to-end suture, and if it might be allowed. I will just mention a case of end-to-end suture which I did last year under what might be considered very favorable circumstances. An old lady in the sixties had a very large abdominal tumor

which was very adherent and which I removed. There were two very large lobes, closely placed to each other, and in between them, at the bottom of the deep sulus, the intestine was attached, and it was not where I could see it, and in trying to lift out the tumor the intestine was torn in such a way as to require the resection of the whole lumen of the intestine. That was done, and the bowel closed end to end by fifteen silk sutures placed in the ordinary Lembert method, and then the continuous suture around beyond this. The patient made an uninterrupted recovery, and was discharged from the hospital seven weeks and two days after the operation. The operation lasted three hours.

Dr. Richardson referred to a statement that no cases of end-to-end suture had been reported where obstruction occurred. I would state that I mentioned one.

DR. BURRELL: There is one thing which has come to my mind, that in these intestinal resections that have been reported the Lembert suture has been used almost exclusively in all the cases; and I have wondered why approximation plates or segmented rings or some contrivance of that description had not been used by the gentlemen. I should like to ask Dr. Porter the length of time it would take for an average enterorrhaphy.

DR. PORTER: I learned the operations upon animals before these plates were used at all, and I feel rather at home with the operation. Perhaps that is one reason why I prefer it. I have the decalcified bone plates of all sizes in my office, but never had occasion to use them. I have never timed myself on the operation. I should think it would be approximately twenty to twenty-five minutes.

DR. CABOT: I should like to recall one case of somewhat allied condition. This was a case of gangrene of the sac, which I reported some years ago. I operated upon an old German or Russian woman for strangulated hernia, incised the constriction and returned the hernia. I tucked the sac back into the ring and brought the pillars of the ring together over it. The patient was not in a condition to stand a long operation and bore it badly. She came out of the ether well, and did not vomit for the first twelve hours, but after that began again to vomit and went on doing well, until on the second day after the operation I decided to open the wound again to ascertain whether there was not still some internal strangulation. I had recently had such a case and was on the lookout for it, and this continued vomiting seemed to warrant the belief. I opened the abdomen. There was no strangulation of any sort.

The bowel was perfectly free. The sac looked rather grayish, and I placed it well outside of the abdominal cavity, opening the original wound. The patient came out of the ether that time in better shape than before, and went on to an uninterrupted recovery. A large portion of the sac sloughed away later. I speak of this as something worth thinking of in some of these cases where there has been a good deal of pressure, particularly where there has been much taxis, as a reason for not always adopting the stitch of Mr. Macewen.

DR. GAY: In regard to the time, I think my first operation took an hour, the second operation forty-five minutes.

Dr. Porter made one remark that makes me suspect that perhaps he thinks somebody has recommended that a distinctly gangrenous bowel should be returned

to the peritoneal cavity. I have not heard any such recommendation as that made. It is the doubtful cases we sometimes put back, not the gangrenous ones.

DR. BRADFORD reported

THREE CASES OF SEPARATION OF THE EPIPHYSIS AT THE HEAD OF THE FEMUR.⁴

THE NEW YORK ACADEMY OF MEDICINE.
SECTION ON ORTHOPÆDIC SURGERY.

STATED Meeting, January 15, 1892, SAMUEL KETCH, M.D., Chairman.

THE DISAPPEARANCE OF LARGE PSOAS ABSCESSSES.

DR. HALSTED MYERS presented a case of lumbar Pott's disease, to illustrate the disappearance of very large psoas abscesses without material interference with the general health during the process.

In this case, which had a strong family tendency to tuberculosis, the abscess appeared early, had gradually increased in size; but after an attack of measles it had become much larger, so as to fill both iliac fossæ, and form pouches in both inguinal regions, as large as a man's fist. At this time the liver was slightly enlarged, but there never has been a trace of albumen in the urine. Eight months later, though still anemic, the child felt well, had an excellent appetite, and the liver had regained its normal size. Absorption was rapidly progressing.

At present the child has a temperature ranging between 98.4° and 99.6, and has a few enlarged cervical glands; but he plays hard all day, has a good appetite, and feels well. The abscesses have almost entirely disappeared, and recovery seems assured.

DR. NEWTON M. SHAFFER said that he had seen this case from time to time, and could testify to the large size of the abscesses. This case would certainly have been considered by some of their colleagues, a fit one for a operative interference, notwithstanding that such an operation would necessarily have proved rather serious, on account of its extent. As usual, under proper mechanical treatment, the abscesses had disappeared.

DR. V. P. GIBNEY said that, in connection with this subject, he desired to report an instructive case. About fifteen years ago, a boy was brought from the West to the hospital, with disease of the lumbar spine. The brace at that time in vogue at the hospital was applied, and the child did well for two or three years, when he experienced some pain in the left thigh, and a tumor appeared in the left iliac fossa. The speaker had advised the systematic use of hot-water douches over the parts, and the result of this treatment was considered at the time to be quite brilliant. He had only just learned the sequel of this patient's history. Shortly after the disappearance of the abscess from the iliac fossa, and while still wearing the spinal support, an elongated tumor made its appearance in Scarpa's space, and then burrowed down until it nearly reached the inner condyle. There was then some redness and tenderness, so the hot douches were resumed, with the effect of causing an entire disappearance of the tumor. Nothing further occurred until several years afterward, when after a fall or strain of some kind, a large and tender tumor made its appearance very suddenly on

the outer side of the thigh, at the junction of the middle and upper thirds. This was accompanied by pain and considerable constitutional disturbance, and a surgeon incised the abscess, removed some bone detritus, and irrigated the cavity. Since then, although the sinuses have been washed out daily with bichloride of mercury solution, and afterwards with peroxide of hydrogen, and then dressed with sublimate gauze, they have been discharging pretty constantly, and there have been occasional symptoms of sepsis. The remnant of the sac can still be felt in the iliac fossa. The tumor which appeared on the outer side of the thigh was probably nothing more than the old abscess deflected by the concussion of the fall.

DR. GIBNEY said that he had narrated this case, because it was one of those in which the abscess had disappeared under what was considered to be good treatment, and yet he was not entirely satisfied with this treatment. He had seen many cases in which the abscess had disappeared in this way, and he was glad when this occurred, but sometimes he could not help feeling that it might be better if he could, under thorough antisepsis, remove this pus by a surgical operation, and so relieve the patient from this constant menace.

THE USE OF IODOFORM IN THE LOCAL TREATMENT OF STRUMOUS JOINT DISEASES.

This was the title of a paper by DR. J. D. BRYANT. In this paper, the author used the terms, "strumous disease," and "tuberculous disease" synonymously. For practical purposes, the products of tuberculous joint disease, may be said to be located in the joint cavity and its lining membrane, and in the peri articular tissue, associated with this membrane. The rice and melon seed bodies in these diseased joints, are often infected with the tuberculous agents. In the present paper, the author excluded from consideration, disease of the integument, and of the immediate subcutaneous tissues.

The preparations of iodoform which had been used by the author were ten per cent. solutions with ether or glycerine. The ethereal solution was easily obtained in an aseptic condition, it flowed freely through needles of small calibre, and by its rapid diffusibility, quickly deposited the iodoform upon the disease products. But this very property of rapid diffusibility made it objectionable on account of the liability of producing constitutional effects, and because of the irritation produced by the fluid, which made the injections extremely painful, and often gave rise to circumscribed abscesses. A solution of iodoform in sterilized glycerine or oil had the advantage of not producing these unpleasant constitutional effects, and of not being painful when injected, but on account of its viscosity, it was necessary to employ needles of large calibre. It was well to remember that all iodoform solutions are prone to undergo chemical decomposition, especially when nearly saturated, or when exposed to sunlight. Camphor has the property of increasing the solubility of iodoform in these fluids, so that a saturated solution of camphor in olive oil will dissolve six per cent. of iodoform.

No definite rule can be laid down as to the amount of iodoform which can be injected without danger of producing constitutional effects; thus one and a half grains have been known to give rise to these symptoms, while in other cases, no such result has followed the introduction of one hundred and fifty grains. It is

⁴ See page 212 of the Journal.

generally considered that thirty grains of iodoform may be injected, but the difference of action of the ethereal and the glycerine solution must be borne in mind.

The author then spoke of the different manifestations of iodoform poisoning, those cases being considered the most dangerous in which there was a rapid and compressible pulse, either with or without fever. Then the presence of iodoform in the human system is evidenced by a disagreeable taste; the introduction of a silver piece into the mouth, will immediately develop a garlic taste, which, according to Poncet, is characteristic of the presence of iodoform. Another test is the production of a canary-yellow color when calomel is mixed in the saliva.

The author related in detail the histories of two cases, to illustrate the action of the iodoform in the treatment of joint disease. In the first one, the patient, aged eighteen, was admitted to Bellevue Hospital on February 17th, 1891, with a history of having suffered from disease of the knee-joint for three years, during which time, he had been treated in various ways without benefit. The synovial cavity was greatly distended with fluid, there was no special tenderness, and no increase in the temperature of the joint. There was much relaxation of the ligaments, and lateral motion on hyperextension. Walking did not cause pain, but there was so much relaxation of the lateral ligaments, that locomotion was impracticable without confining the joint with a bandage or splint. On February 21st, the joint was opened by a free incision, and its cavity thoroughly irrigated with a 1: 2000 solution of bichloride of mercury. Numerous melon-seed bodies were evacuated, and the wound then closed. The wound healed by primary union, and the joint was diminished in size, but the previously over-distended soft parts remained fleshy, and the relaxed ligaments made the joint very insecure. On April 1st, the joint was opened in two places, at the site of the former incision, and at the outer side of the quadriceps tendon, so as to lead directly into the outer pouch of the upward prolongation of the synovial cavity. After a thorough irrigation with 1: 2000 solution of bichloride of mercury solution, and the complete removal of numerous "rice-seed" bodies, the cavity was irrigated with a ten per cent. ethereal solution of iodoform, and the wounds closed as before. Primary union occurred without reaction. A portion of the synovial membrane was removed at this operation, and was sent to Dr. Briggs, who reported that there was no doubt about its being involved in the tubercular infection. From this time until May 1st, the knee diminished in size, and increased in stability, yet the latter was not sufficient to render the joint secure. On May 9th, a small quantity of fluid still remained in the joint, and as the patient was anxious to leave the hospital, two ounces of a ten per cent. solution of iodoform in glycerine were injected directly into the joint cavity. There was no reaction, and after four or five days rest in bed, the patient was allowed to go around the ward, and on June 16th, he was discharged. There had been no pain, tenderness, or effusion for two weeks prior to his leaving the hospital. Should a similar case come under his observation, the author said that he would prefer to open the joint at once, in two places, clean out the cavity by irrigation and manipulation, and after perfect union had been secured, inject into the cavity, two or three ounces of a ten per cent. solution of iodoform in sterilized glycerine or oil.

In a second case, one of old knee-joint disease, attended with considerable flexion of the leg and subluxation of the head of the tibia, occurring in a man, twenty years of age, iodoform injections were begun after other recognized methods of treatment had failed to produce any noteworthy local improvement. The case was under the care of Dr. Gardner, of this city.

Eight drops of a twenty per cent. solution of iodoform ether were injected at each of three separate points of greatest tenderness, into the deepest tissues, and perhaps some portion into the joint itself. Great pain was produced at the site of the injection, followed by numbness of the limb, and persistent nausea for twelve hours, and, as the same symptoms followed a second injection, it was decided to substitute a twenty per cent. solution of iodoform in glycerine. This latter preparation caused less pain in the limb and no systemic disturbance. The injections were repeated every two or three days. At the end of thirty days, the joint was free from pain and swelling, the doughy feeling was gone, there was voluntary motion, and considerable weight could be borne by the limb. His general condition also kept pace with the local improvement, and at the present time, the limb is nearly as strong as the other; there is considerable motion, so that the patient can walk on it without artificial aid. There can be no reasonable doubt of the tuberculous nature of the disease of the joint in this case, nor of the curative effects of iodoform.

DR. A. B. JUDSON had failed to see the necessity or desirability of using iodoform in joints which are under mechanical treatment. In children thus affected, local medication may be ignored in favor of general treatment. He believed that the trouble is not so much a local fault, as a failure for some reason or other, of the system to arrest the morbid action, and repair the damage already done, and the system, rather than the affected part, should receive most attention. Mechanical treatment is a local application, but its indirect action is of the utmost importance in relieving pain, permitting sleep, facilitating locomotion and promoting general well-being. It prevents the injurious effects of habitual trauma and provides for ultimate symmetry and ability. Beyond this roborant and reconstructive treatment, general medication is in order, reinforced by hygiene and an abundance of rich and wholesome food, in which cream and other forms of animal fat should be in excess. He believed the effects thus produced leave no room for the administration of antiseptics and purgatives.

DR. ROYAL WHITMAN said that he was surprised to hear the previous speaker express doubt as to the influence of iodoform on tuberculous processes, for, it was not a matter of opinion, but of record: Bruns, Krause and other investigators had shown that the membrane of tuberculous abscesses ordinarily consists of four layers: (1) an outer layer of thick porous tissue; (2) a layer of spindle cells in a state of active proliferation; (3) actual tuberculous granulations, and (4) necrotic and degenerated tissue. The two inner layers contain the tubercle bacilli. Under the iodoform treatment, it was found that healthy granulations sprang from the spindle-cell layer, the bacilli disappeared and the tuberculous granulations and inner layer were converted into a fluid, which might be absorbed or withdrawn with an aspirator. Arens, in a recently reported series of 255 cases of tuberculous disease of various joints, states that under the iodoform

treatment, forty per cent. showed very marked improvement. The most favorable cases were those of disease of the wrist and elbow. Trendelenburg had given up the use of the etheral solution in his clinic, because of the pain produced. Instead, he uses a twenty per-cent. solution of iodoform in oil, injecting about one teaspoonful at intervals of eight days. Krause uses a larger quantity, thirty to eighty cubic centimetres, injecting at intervals of three weeks. Bruns states that eighty per cent. of all abscesses may be made to disappear by the use of iodoform, and the specific action of this drug on the tubercle bacillus, seems to be very generally-recognized. Trendelenburg is now using oil and iodoform at a temperature of 100° C., with the object of making a solution of the iodoform in the oil, and of securing its deposition in a more finely divided state.

DR. SAMUEL LLOYD said that he had seen very remarkable results in his clinic, following the use of injections of iodoform emulsion, both in joint difficulties and in tubercular adenitis; in fact, in the latter class of cases, they acted so satisfactorily that they had been used almost to the exclusion of operative measures. In some cases where tubercular deposits had been found in the lungs, the change was very decided after the injections, especially when these were pushed up to the point of producing constitutional effects. In one or two cases where operative procedures had been undertaken, and secondarily, injections had been used on a recurrence of the disease, the improvement was much more rapid than after the first operation when the iodoform was not employed. When using the iodoform injections in abscess cavities, the results had not proved good until the cavity of the abscess had been washed with hot water, or with some antiseptic solution. It is advisable then to inject the emulsion up to the point of causing some distension. Dr. N. Seun had had a similar experience; and in his recently published article on this subject, he says he uses weaker solutions of iodoform, but in larger quantities.

DR. R. H. SAYRE said that in using these injections, he had felt the necessity of employing the iodoform in a more finely divided state, and therefore, he thought it was an advantage to use the heated oil. He recalled two cases of suppurating ankle-joint disease, one of which had been treated by injections of iodoform, and the other by injections of aristol. They had done equally well, and after about two months of treatment, the evidences of inflammation had entirely disappeared, and there was no pain or tenderness about the ankle. A splint had been applied to take off the weight of the body. In a case of tubercular inflammation of the thumb, he had obtained a good result from the injection of a ten per cent. solution of iodoform and likewise in some abscesses.

DR. H. L. TAYLOR said that he endorsed what Dr. Judson had said as to the value of mechanical treatment, and yet welcomed the method presented in the paper. His experience with iodoform in a few cases, had convinced him that it had a specific action on tubercular tissue. One of his most striking cases, was that of a typically tubercular subject, a youth of seventeen years, who had been for some time under observation of Dr. Da Costa for suspected pulmonary disease. He had been hobbling about without crutches, in spite of advice, for about one year after the development of symptoms of tarsal disease, before he came under the speaker's care. He was made to use crutches, and the

foot was immobilized with an apparatus. After some months, a sinus having appeared, on the advice of Dr. Abbe, injections of an etheral solution of iodoform into the joint were begun. He could honestly say that the entire appearance of the affected parts was changed after one injection, and the subsequent progress of the case to complete cure, although slow, was steady. He had also used the iodoform emulsion in sinuses about joints, and he believed that this treatment produced beneficial effects independently of its antiseptic action.

The CHAIRMAN said that about two years ago, while visiting the clinics in Germany, he had seen a good deal of this treatment with the etheral solution of iodoform, and he had been impressed with the great frequency of symptoms of iodoform poisoning, and with the general disregard of mechanical treatment shown by these surgeons. Still, he believed that in these iodoform injections, we had a valuable adjunct to mechanical treatment, and one which had not been sufficiently tested by American orthopedic surgeons.

DR. BRYANT, in closing the discussion, said that he had not had the slightest idea of substituting the iodoform injections for mechanical treatment, but he had thought that it could not fail to be a valuable adjutant to this treatment, on account of its well-known influence upon the tubercle bacilli, and because the injections could be so easily made. In the case of knee-joint disease which he had described, there the rice and lemon seed bodies were in such large numbers, he did not believe that mechanical treatment alone would have cured the case; in fact, the patient had had this treatment and had not been benefited by it.

Recent Literature.

Ptomaines, Leucomaines and Bacterial Proteids; or, the Chemical Factors in the Causation of Disease.
By VICTOR C. VAUGHAN, Ph.D., M.D., and FREDERICK G. NOVY, Sc.D., M.D. Second edition, revised and enlarged. Philadelphia: Lea Brothers & Co. 1891.

This book is rewritten from the old edition of three years ago, and, being brought up to date, is a material improvement on the first. Ptomaines are defined as those chemical compounds which are basic in character and are formed by the action of bacteria on organic matter; while leucomaines are those basic substances which result from tissue metabolism in the body; the bacterial proteids are those formed by the fermentative action of bacteria. It will be seen, therefore, that the difference between a ptomaine and a leucomaine is simply one of origin, and does not indicate any fundamental difference between the two groups.

A brief chapter is devoted to the history of the bacterial poisons, and then a *résumé* of some poisonous foods, with the symptoms produced by them, is given. The list includes mussels, fish, sausages, ham, meat, cheese, milk, ice cream and bread. Cases of poisoning by mussels and fish are included in which it is not at all clear that the poison existed in the food, and judging by the more recent reports were probably due to bacterial infection. Their inclusion, however, only increases the value of the book.

The fourth chapter is devoted to a general consideration of infectious diseases, and gives very much the

position held by all intelligent workers, while in the next the poisons of particular diseases are treated. The list includes anthrax, Asiatic cholera, tetanus (for which he recognizes two germs, that of Nicolaier and that of Kitasato), tuberculosis, diphtheria, suppuration, the summer diarrhoeas of infancy and typhoid fever. The summer diarrhoeas are rightly attributed to many kinds of bacteria, and the credit for this discovery is given to Vaughan, Barker and Escherich. The position held in regard to typhoid fever is peculiar to the authors, namely, that the Eberth bacillus, as found in the spleen after death, is an involution form of any one of a number of germs which are found in certain waters.

The latter, and by far the larger, part of the book is devoted to the chemistry of the subject. The methods of work are outlined, and the importance of some of the poisons to the medico-legal examiner are pointed out. Fifty-nine ptomaines and eighteen leucomaines are considered in detail, among which is to be found the old acquaintance of many, xanthine. The last chapter is devoted to auto-infection, while last, but not least, there is a most extensive bibliography of the chemistry of the subject.

As a whole, the book is clearly written, well arranged and comprehensive, but gives one the impression of underrating the knowledge possessed by all bacteriologists. The book will be found a great convenience to all who desire to form a measure of our present knowledge of the difficult subject of bacterial and somatic poisons.

Diphtheria: Its Natural History and Prevention. Being the Milroy Lectures Delivered before the Royal College of Physicians of London, 1891. By R. THORNE THORNE, F.R.C.P., F.R.S., London, assistant medical officer to Her Majesty's Local Government Board. London and New York: Macmillan & Co. 1891.

The author's position under the Local Government Board and his work in connection therewith are a guarantee of his fitness to deal with the subject which he chose for the Milroy lectures of 1891. A final chapter consisting of eighteen conclusions, sums up the author's views. From among these "conclusions" we extract the following: (2) During the past twenty years there has been a progressive increase in the rate of mortality from diphtheria in England and Wales; (12) There is reason to believe that attacks of so-called "sore throat" exhibit under certain favoring conditions a "progressive development of the property of ineffectiveness," culminating in a definite specific type which is indistinguishable from true diphtheria.

Surgery. A Practical Treatise with Special Reference to Treatment. By C. W. MANSELL MOULLIN, M.A., M.D. Oxon. Fellow of the Royal College of Surgeons, Surgeon and Lecturer on Physiology to the London Hospital, etc. Assisted by various writers on special subjects. With five hundred illustrations, two hundred of which have been made for this work from special drawings. Philadelphia: P. Blakiston & Co., 1012 Walnut Street. 1891.

The book is divided into three parts. Part first includes the general pathology of surgical diseases; part second that of injuries; and part third the diseases and injuries of special structures and organs. The specialists in their respective departments, have con-

tributed satisfactory chapters, although it may be questioned whether it is wise to introduce into a treatise on surgery the diseases of the eye. The volume as a whole is quite satisfactory as a guide to the general practitioner. It, however, is far from the ideal. Many of the cuts are imperfect, and express but little. There is a want of appreciation of the relative importance of the subjects dealt with. For example, so important a subject as anaesthesia, including a consideration of local and general anaesthesia, the administration of nitrous oxide, ether, chloroform and the A. C. E. mixture, is dismissed in two pages and a half; while the relatively unimportant subject of spina bifida occupies four pages and a half, and lateral curvature of the spine occupies six pages and a half. Very few references are given to authorities quoted, and while this is excusable, yet it is not quite satisfactory. However, the reader will find many subjects treated with a commendable attention to important details. The chapter upon fractures is valuable, and the author's conservatism is worthy of careful consideration.

Lectures on Tumors from a Clinical Standpoint. By JOHN B. HAMILTON, M.D., LL.D., Professor of Principles of Surgery and Clinical Surgery, Rush Medical College, Chicago; and in the Chicago Polyclinic; etc. For the use of Students. Physician's Leisure Library. Detroit, Mich.: George S. Davis. 1891.

This little book presents the lectures by the author, as they were taken down by a stenographer. The author's aim was to impart "the current information in a form intended to fix it in the memory." There are a few interesting cases recorded, but the book, as a whole, is not one that we can commend. Many broad statements are made, and, unfortunately, typographical errors are frequent.

Surgical Bacteriology. By N. SENN, M.D., Ph.D., Professor of Surgery, in Rush Medical College, Chicago; and in the Chicago Polyclinic; Attending Surgeon to the Milwaukee Hospital, etc. Second edition, thoroughly revised. Philadelphia: Lea Brothers & Co. 1891.

The first edition of this book was quickly exhausted, and in the second edition "the author has aimed to add new facts illustrative of the relations of pathogenic micro organisms to the various surgical lesions, and eight new illustrations have been inserted in the text, descriptive of microbes, not illustrated in the first edition."

The material for this book has been obtained from the current literature, and it embodies the best work of the leading men. The book has been divided into chapters, which will be a matter of convenience to the reader. The index of subjects and the index of authors are of considerable value in referring to various subjects. The book, as a whole, is an excellent presentation of the literature of surgical bacteriology. The plates are extremely valuable, and serve to illustrate the text in a very satisfactory manner. To any one desiring a general idea of surgical bacteriology we can commend this volume.

THE new hospital at Antananarivo, the capital of Madagascar, was opened by the Queen of Madagascar recently. It is sustained by the Society of Friends of Great Britain.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, MARCH 3, 1892.

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**THE PUBLIC HEALTH IN MASSACHUSETTS:
TYPHOID FEVER AND THE TYPHOID BACILLUS.**

The Twenty-second Annual Report of the Massachusetts State Board of Health, for the year 1890, comprises the general work of the Board and papers upon special sanitary topics, including a report to the legislature upon water-supplies and sewerage, with a statement of the advice of the Board given under the law of 1888; examinations of water-supplies and rivers; suggestions as to selection of sources of water-supplies; report of food and drug inspection; summary of weekly mortality reports; statistics and observations on the growth of children, by Prof. H. P. Bowditch; typhoid fever in its relation to water-supplies; health of towns.

The six cases of small-pox which occurred in the State during the year, with one death, were investigated and at once controlled, such cases as occurred in other States and in Canada being also reported; severe local epidemics of diphtheria revealed, besides infection, bad sanitary conditions and, in one case, a probably infected milk-supply; a special investigation indicated an increased number of deaths from hydrophobia and a wider prevalence in the State; two cases of trichinosis, a rare disease with us, were reported; one noxious trade, for the manufacture of Paris-green, was so regulated as to abate the nuisance.

Advice regarding water-supplies was given in 17 cases; in 17 also with reference to sewerage and sewage-disposal. Three hundred and forty-five pages of the report are given to a minute investigation and report upon the various questions affecting water-supplies and sewerage and the purification of sewage and of water by filtration. The facts determined and the observations thereupon maintain the high standard of scientific and practical value with which we have become familiar in previous reports of the Board.

Including milk, 5,585 samples of food were examined, of which 1,814 were found impure or not conforming to the statutes; of 3,236 samples of milk,

1,858 were above the standard and 1,378 below, or adulterated; in 400 samples of drugs, the percentage of adulteration was 1.87.

The weekly reports of mortality, although not complete, have been distributed to boards of health and otherwise, thereby furnishing an important index of the prevalence of disease in the several parts of the State.

Mr. Mills, the distinguished engineer, a member of the Board, contributes a most important study of the excessive death-rate from typhoid fever in Lawrence and Lowell.¹ For the twelve years ending in 1889, those two cities had average annual typhoid death-rates of 8.33 and 7.63 for each 10,000 inhabitants, as compared with an average of 4.62 in the 28 cities of the State. In the year ending April 1, 1891, the rate in Lawrence, with a population of 45,000, was 17.33; and in Lowell, 19.23, with a population of 78,000. There was at the same time no noteworthy increase in deaths from typhoid fever in the other cities and towns of the State.

In Lowell the cases were very generally distributed throughout the city, the numbers following nearly the density of the population, all being supplied by the city water. The cases found in Lawrence were all within the area provided with water from the city water-works, and they were proportionately more numerous near the reservoir than at a distance from it.

The fact was discovered in November that the water-supply of Lowell was contaminated by faeces of typhoid-fever patients discharged into Stony Brook, only three miles up stream from the intake of the Lowell water-works, and in a very few weeks after there was a rapid increase in the number of deaths from typhoid fever in the city. Six weeks later there was an alarming increase in the number of deaths from typhoid fever in Lawrence, the water-supply of which is drawn from the Merrimack River nine miles down stream from the point where the Lowell sewage enters the river. In December the typhoid fever bacillus was found in water from the service-pipes in Lawrence.

The temperature of the river-water in November was from 45° to 35° F.; the distance from the sewers in Lowell to the intake of the Lawrence water-works is nine miles, and the time for the water to pass from the sewers to the intake was at that time less than eight hours. Entering the reservoir the same day, the water would reach the outlet and enter the service-pipes within ten days—most of it within a week. It would then be distributed over the city, in the portions near the reservoir, in about one week from leaving the sewers of Lowell, and in more remote parts of the city in about two weeks.

To prove whether typhoid fever germs would survive in the Merrimack River water, when at the low temperature of the month of November, long enough to pass from the Lowell sewers to the service-pipes in Lawrence, a series of experiments was made by the

¹ For Epidemic of Typhoid Fever in Lowell, by Prof. W. T. Sedgwick, see Journal, vol. xxiv, pp. 397, 426.

Board by inoculating water from the service-pipes with typhoid fever germs and keeping the water in a bottle surrounded by ice, at as near freezing as practicable, for a month, and each day taking out one cubic centimetre and determining the number in it of typhoid fever germs. The number constantly decreased from 6,120 the first day, 3,100 the fifth day, 490 the tenth day, 100 the fifteenth, to none on the twenty-fifth. The experiment clearly showed that typhoid bacilli from the sewers in Lowell may live in winter to enter the reservoir of the Lawrence water-supply; that the numbers will decrease in the reservoir; that a considerable portion will live to enter the service-pipes, and that this portion will decrease as the water proceeds in the pipes across the city — a fact which apparently explains the reason why much the larger number of cases of typhoid fever were in parts of the city near the reservoir; but that some germs survived the passage through the pipes was proven by their being found in water drawn from the service-pipes, in December, at the Experiment Station, across the city two and a half miles distant from the reservoir.

It was found, by the inquiry, that in general in the cities of the State the death-rate from typhoid fever has been greatly reduced by the introduction of pure water; that in one city (Holyoke), where there was not such a reduction, a portion of the people used, for drinking, water from canals or from wells subjected to serious pollution by sewage, and that the deaths from typhoid fever are much more frequent among that portion of the community which uses the contaminated water than among others.

The only two remaining cities, which have not diminished death-rates from typhoid fever after the introduction of water-supplies, receive their supply from a river polluted by sewage. The season in which typhoid fever prevails in these two cities is later than in other cities, and in the lower city on the river later than in the upper city; also in the lower city at a season when other places are nearly free from the disease, and when it would be prevalent if produced by the sewage of the upper city. Further, during the greatest prevalence of typhoid fever in the upper city, when the water of the river which passed the upper city and received its sewage had reached the service-pipes of the water-supply of the lower city, and there was the greatest prevalence of the disease in the lower city, typhoid fever bacilli were found in water taken from the service-pipes.

The wisdom of the legislature is shown in their financial support of the Board, the general expenses for the year having been \$9,871.01; for food and drug inspection, \$10,112.39; water-supply and sewerage, \$25,161.46.

THE OPENING OF THE LANGENBECH HAUS in Berlin will take place formally this spring during the annual meeting of the German Surgical Society. This is the building which has been erected as a place of meeting of all the medical societies in Berlin.

HERTWIG'S THEORY OF IMMUNITY.¹

THE theory of immunity recently propounded by Prof. Oscar Hertwig, the eminent anatomist and embryologist at Berlin, is especially worthy of note, not only because of the source from which it proceeds, but because it is an ingenious attempt at mediation between the contesting cellular and chemical hypotheses. Hertwig takes his stand upon the highly important discoveries of Pfeffer, Stahl, Gabritschewsky and others, regarding the influence of various chemical substances upon micro-organisms.

The distinguished plant physiologist Pfeffer, as is well known, found that certain chemical substances soluble in water exert an influence, part attracting and part repelling, upon freely motile plant or animal cells such as infusoria, spermatozoa, bacteria, leucocytes and their like. This phenomenon of "chemotropism," or "chemotaxis," is positive if the organisms advance towards the place from which the chemical stimulus proceeds, negative if they retreat from it. Malic acid in high dilution, for example, exercises a generally positive chemotropic effect, chloroform, a negative. That these terms "positive" and "negative" have only a relative value is shown by the fact that while a very weak solution of malic acid will attract motile organisms towards the capillary tube in which it is contained, a stronger solution — five per cent. — will actively repel the organisms. That is to say, the positive effect becomes a negative one as a result of the concentration of the chemical substance.

Furthermore, to continue with the example of malic acid, if the organisms are *ab initio* in a solution containing malic acid, a stronger solution of that acid will be required in order to attract them than is the case if they are in pure water. A solution of malic acid of sufficient strength to attract organisms from pure water will have no effect upon organisms already immersed from the start in dilute malic acid. On the other hand, a solution so strong as to repel organisms in pure water, will, in dilute malic acid, attract them. The spermatozoon of the fern, to use the classic example, when in a weak solution of malic acid are attracted by a solution so strong as to repel the spermatozoa when the latter are in pure water.

Negative chemotropism may therefore, under changed conditions, become positive. This fact is of cardinal importance in Hertwig's conception of immunity.

The white cells of the blood are apparently very susceptible to chemotropic influences. The metabolic products of pathogenic bacteria — whether "ptomaines," "toxines," or something else — exert in general, a positive effect upon the leucocytes and so draw them towards the source of the stimulus, that is to the "inflammatory centre."

Hertwig points out that the numerous chemotropic possibilities group themselves under two heads. In the first place, the metabolic bacterial products may be present in the blood and in the diseased tissues in

¹ Über die physiologische Grundlage der Tuberkulinwirkung: eine Theorie der Wirkungsweise bacillärer Stoffwechselprodukte, Jena, 1891.

almost or quite equal proportions. In this contingency there will be no effective chemotropic stimulus, and the leucocytes will consequently not be drawn towards the affected locality.

In the second place, the substances accumulated in the blood and diseased tissues are of different degrees of concentration in the two places, and this difference causes a chemotropic movement of the leucocytes. Here there are obviously two possibilities, either the higher concentration exists in the blood or in the diseased tissues. In the latter case the leucocytes are drawn into the affected locality; this is perhaps the most ordinary and well-known condition — as in suppuration. In the former case the leucocytes, which in other conditions might have gathered in the diseased area, are retained in the blood-vessels.

In Hertwig's opinion the action of Koch's tuberculin can be best explained by reference to some such chemotropic phenomena. Suppose that the metabolic products of the tubercle bacilli are in so high a degree of concentration in the tissues as to exert a repellent, or negatively chemotropic, effect upon the leucocytes, which, in consequence, shun the affected area. On the injection of tuberculin into the blood the leucocytes, after the analogy of the spermatozoa and malic acid, become attracted by the bacterial substances in the tissues which were previously so relatively concentrated as to repel. In this way Hertwig thinks to explain the reactions following the introduction of tuberculin into the blood. On this assumption also he believes it possible to explain many of the perplexing and disastrous consequences of injections of too large quantities of tuberculin. He concludes that Koch's application of tuberculin injection "rests upon a thoroughly sound physiological foundation."

Hertwig's further treatment of the subject ventures upon the much controverted ground of the phagocytetheory and its implication. He considers that Metchnikoff's view is essentially correct and refers the artificial production of immunity to the greater sensitiveness which the leucocytes have acquired toward the bacterial products, and consequently toward the bacteria themselves. The arguments presented in support of this view are perhaps more ingenious and suggestive than convincing.

MEDICAL NOTES.

RESTRICTION OF IMMIGRATION. — Secretary Foster has suggested to Congress that the head tax of fifty cents on each immigrant be abolished and that a tax of one dollar, to be paid by the importing company, be substituted; also that each company file a bond of not less than \$50,000 for the return of immigrants found within two years after landing to have been brought in contrary to the laws of the United States. A system of preliminary inspection before embarking is also proposed, to be under the charge of a body of commissioners and inspectors responsible to the United States Consuls.

THE RIOTS IN BERLIN. — As a result of the riots in Berlin last week, there were twenty-five admissions to the hospital, the principal injuries being broken arms and legs and sabre cuts.

INFLUENZA IN EUROPE. — During the week ending February 13th, the epidemic of influenza in London had sensibly diminished. The death-rate was thirty per thousand. In most of the Continental cities, the disease appeared also to be decreasing. In Vienna an epidemic of intestinal catarrh followed the previous influenza epidemic. Whether there is any connection between the two has not been definitely settled.

SIR MORELL MACKENZIE'S FEES. — According to the *Medical Press*, it is stated that the sum, which the late Sir Morell Mackenzie was paid for his attendance on the late German Emperor was £12,000. After this a hundred guineas for removing an elongated uvula seems a comparatively moderate fee for such an operation, but this was what the distinguished specialist received a few months ago from an eminent lawyer who was under his care for this affection.

A WARNING FROM VIRCHOW. — The correspondent of the *Lancet* says that on February 9th, Professor Virchow addressed the following to one or more of the Berlin papers: "Cincinnati papers publish lengthy advertisements, according to which the 'great German physician,' Dr. Karl Virchow Schick, has arrived there from Berlin and opened his consultations. It is alleged that he has made important discoveries in the germinal treatment of chronic diseases, and that his prescription is used by 806 doctors in Europe. Permit me to remark that, according to the official lists, there is not and never has been a physician of this name in Berlin or in Prussia, and that such a one from the other States of the German Empire is also not known. It is hoped that this notice will suffice to induce the American papers to oppose the tactics of the gentleman in question."

INSTRUCTION FOR GERMAN ARMY SURGEONS. — In order that the Prussian medical officers shall have an acquaintance with the new discoveries in the department of public medicine, arrangements have been made for their attendance on a course of lectures to be held in all the Prussian Universities. These courses will extend over three weeks of each year at the end of the regular session, and it will be incumbent on each surgeon to attend one such course.

TUBERCULOSIS AND EARTHWORMS. — MM. Lortet and Despeignes have published the results of some experiments showing the connection between the common earthworm and the tubercle bacillus. They find that the bacillus may remain for several months in the worm without changing its virulence.

BOSTON AND NEW ENGLAND.

MORTALITY OF BOSTON. — The number of deaths reported during the past week was 197, making the death-rate 22.3. Four deaths were due to influenza, 29 to consumption, 34 to pneumonia, 15 to heart dis-

ease and 11 to bronchitis. The number of persons who died over sixty years of age was 42.

BOSTON BATH HOUSE CO.—A company is soon to be incorporated with the above title to establish baths for the poor of Boston, following the steps of the chief European cities and the recently established People's Baths in New York. There is already a small establishment of this kind in Boston where, during the first year, three thousand men, women and children made use of it. It is hoped that after the baths are established they will be self-supporting. About \$40,000 are needed for the establishment of the institution.

A BEQUEST TO INSTITUTIONS.—By the will of the late Caroline P. Adams, of Newton, the following are among the public bequests: Children's Hospital, \$2,500; Adams' Nervine Asylum, \$10,000.

DEFILEMENT OF THE BEACHES.—The Committee on Public Health of the Massachusetts Legislature has recently considered a petition of the town of Swampscott for legislation to protect that town and other towns from injury and danger to the public health occasioned by the floating back of the garbage and filth of the City of Boston on to their beaches and shores.

NEW YORK.

TYPHUS FEVER.—During the last week several deaths have occurred among the typhus fever patients on North Brothers' Island, and some twenty-five cases have been pronounced well. A number of new cases have occurred among the Russian Hebrews of the *Massilia*, and notwithstanding the energetic efforts of the sanitary authorities to prevent the spread of the disease, a few cases have developed among people, not of this class, who frequent the cheap lodging-houses. In two or three instances the nature of the trouble was not discovered until after the patients had been removed to Bellevue Hospital. All suspicious cases at that institution are now isolated and carefully watched, and as soon as it becomes evident that the disease is typhus the patient is transferred to the hospital for contagious diseases at North Brothers' Island.

CITY CARE OF THE INSANE.—The advisory committee appointed by the Mayor to make a thorough investigation and report as to the best means of taking care of New York City's pauper insane, after inspecting the institutions on Ward's and Blackwell's Islands, where they found the conditions so unfavorable on account of the inadequacy of the buildings and the overcrowding of the inmates, made a visit to the City's Farm for the Insane at Central Islip, Long Island, where there are now 250 acres under cultivation by the patients, and discovered a most marked and favorable contrast in the state of affairs. More recently they visited the Binghamton and Willard State Hospitals for the Insane, and their report, which is now being prepared, will soon be presented.

STATE CHARITIES.—The Twenty-fifth Annual Report of the State Board of Charities was recently

transmitted to the Legislature, and shows the value of the property held by the charitable, correctional and reformatory institutions of the State on October 1, 1891, to be something over \$72,000,000 as against about \$64,500,000 at the same date the preceding year. The number of inmates in these various institutions was 747,773, an increase of 3,878 during the year, and of these 16,647 were insane. Total increase of insane in the last eleven years has been 7,110, or nearly seventy-five per cent., while the increase in the general population of the State has been only about nineteen per cent.

CENTENARIANS.—Two centenarians have died in the city during the past week. The first was Mrs. Mary Clemints, who was born in Ireland and when she came to this country twenty-eight years ago she brought with her her baptismal record, which shows her to have been one hundred and three years, eight months, and fifteen days old at the time of her death. She had nine children and her descendants are now very numerous. She always enjoyed perfect health, and of late years had lived with a son, now eighty-four years old. She kept house for him, and on the day that she died, got up at five o'clock as usual to attend to her morning duties. The other centenarian was an Italian whose age was reported to the Bureau of Vital Statistics as one hundred and five years. For two years past he had been an imbecile. The oldest woman of the Tonawanda Indians died in February, on the reservation near Buffalo, at the age of one hundred and two. She was the widow of the Warrior Black Squirrel who distinguished himself on the Niagara frontier in the War of 1812.

Miscellany.

BULLET WOUNDS FROM THE MANNLICHER RIFLE.

An Italian officer who had the opportunity of studying gun-shot wounds made with the Mannlicher rifle during the late war in Chili describes these wounds as different from those produced by the older weapons.¹ They either kill on the spot or produce a wound which is generally not very serious. Even at long range bones are pierced without leaving behind pieces of steel or lead, and also without producing splintering of the bone to any extent. The balls which were removed from wounds had entirely preserved their form, not being either flattened or broken. The author promises soon an extended report on the subject which will be of great interest to military surgeons. These peculiarities of modern rifle bullets have been noticed already by Professor Bartleben in Berlin, who said that in case of war, wounds made by the present German infantry would be characterized by the straightness of the course of the bullet and the lack of injury to the neighboring soft parts. The bullet is of small calibre, made of lead coated with steel, and is sent with great velocity.

¹ Wiener klin. Woeh., February 11.

IN MEMORIAM. DR. HENRY I. BOWDITCH.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

The Boston Society for Medical Improvement honors itself in honoring the memory of Dr. Henry Ingersoll Bowditch, and in placing upon the records of the Society its appreciation of his services to medicine and its admiration of his character.

Dr. Bowditch was for fifty-seven years a member of our Society, and was, until his health failed, most constant in his attendance at our meetings. His ardent, eager zest for any knowledge that might help his patients; his fervid advocacy of every movement to benefit medical science or raise the standard of our profession; his generous recognition of all earnest, true work; his respect for every honest opinion; his frank criticism of what he held to be untenable; his zealous defence of the right; — his strenuous support of every good act or thought, — are familiar to us all. His quick intuition and ready sympathy, his innate sense of justice and intense love of truth, the genuineness of his purpose, the unselfishness of his life, the sincerity of his friendship, will always be held by us in grateful and loving remembrance.

His faithfulness to his trust marked him as the physician. His heroism, his public service, the labors and the distinctions of his loved profession brought out in bolder relief the simplicity and modesty of the man.

To Dr. Bowditch's family the Society respectfully offers its sincere sympathy.

CHARLES F. FOLSOM,
GEORGE B. SHATTUCK,
EDWARD H. BRADFORD.

METHYLENE-BLUE IN CYSTITIS.

AT a recent meeting of the New York County Medical Association, Dr. Joseph N. Henry presented two specimens of bright blue urine, which, he said, were from patients suffering from chronic cystitis whom he had been treating with an aniline dye. He had adopted this plan in consequence of reports which he had seen in German journals, and it was his practice to give one grain of methylene-blue three times a day, after meals. One of the patients, who had been suffering for over two years, had locomotor ataxia and prostatitis, and gave a syphilitic history. There had been twenty per cent. of mucus in the urine; but in three weeks this had been reduced to one or one and one-half per cent. The other case was non-specific, and the patient had just been discharged cured.

METHYLENE-BLUE IN MALARIA.

FOLLOWING the suggestion of Guttmann and Ehrlich, Thayer¹ reports five cases of malaria treated at the Johns Hopkins Hospital with methylene-blue. The usual dose was one and a half grains five times a day.

In all the cases the urine was carefully examined, and no albumen was at any time found. In all of the cases where methylene-blue alone was given, its administration was followed within the first three days by slight stranguary, which, however, was immediately relieved by nutmeg, and in the cases where nutmeg was given in the beginning there were no unpleasant results. The urine in all the cases was of a deep blue color; the faces, though untinged when passed, be-

came blue on exposure to air. The sweat and saliva, however, did not appear to be colored.

All of the cases, with the exception of one, were of the more chronic and severe types of malarial fever, those in which the hyaline intracellular bodies and the crescents have been found. It is a well-known fact that in these cases quinine is often very slow in its action, and that with the combined administration of quinine and arsenic, organisms may be found in the blood for weeks and months. The one case of common tertian ague yielded almost immediately to the methylene-blue, the organisms disappearing on the third day. In another case the organisms had not entirely disappeared in twenty-three days. This was a severe chronic case. In a third case, which appears to have been one of the more severe varieties, no organism was seen after the ninth or tenth day. In none of the cases was there any chill later than twenty-four hours after the beginning of the administration of methylene-blue. The doses of methylene-blue were not large, and it is hard to know with what dose of quinine to compare them. The author concludes that methylene-blue certainly has, as Ehrlich and Guttmann claim, a distinct anti-malarial action, a fact which is certainly of great interest, and it would be well if more observers in this country were to carefully follow up this question.

THE MONGOLIAN EYE.

KOMOTO¹ has studied in detail the differences between the characteristic eye of the Mongolian nations, and of the Caucasian race. The difference between the two is caused neither by the size of the eye-ball, nor the color of the iris, which is the same in both, but in the shape of the eye-lids. The epicantus, a fold of the skin covering the inner canthus, is rare in adult white persons, but exists physiologically among the Japanese, so that it is sometimes called the Mongolian fold. In the majority of cases this fold runs obliquely inwards and downwards from the upper lid, so that the inner canthus is not round as in white people, but is sharp. When the fold is large it spreads to the inner part of the lower lid, in which case the upper lid does not cross the cornea horizontally, but obliquely, giving the peculiar expression to the eye often met with in Japanese.

Another peculiarity of the upper lid in Mongolians is the lack of development of the orbital furrow, the groove below the eye-brows. The skin covering the upper lid is very loose, so that when the cartilage is raised the skin is thrown into a transverse fold. When this fold is well developed it droops slightly over the margin of the lid. This interferes with the eye-lashes, directing them downwards instead of forwards.

In Japanese the cilia are short and straight. On the lower lid they are sometimes so badly developed and so few in number that they appear at first to be absent. When well developed they are sometimes bent inwards by the peculiar formation of the upper lid, and may seriously irritate the cornea. Except for this there is no great difference in the lower lid of Mongolians and Europeans. The margin is generally more curved in white people, so that there is often a portion of the sclerotic exposed between the lid and the cornea, a peculiarity, the author remarks, which makes "their eyes looking apparently upwards gener-

¹ Johns Hopkins Hospital Bulletin, vol. iii, no. 19.

¹ Sei-I-Kwai Medical Journal, December 26, 1891.

ally." As the skin of the lid is less firmly connected to the subjacent tissues in the Japanese, entropion is more common, but ectropion less common among them than among Europeans.

THERAPEUTIC NOTES.

TO DETECT SUGAR IN URINE. — Flint¹ describes a simple apparatus for detecting the presence of sugar in the urine, when the results of Fehling's test are uncertain. A small straight bottle or a small test-tube is fitted with a cork, through which is passed a small tube that reaches nearly to the bottom. The glass tube is bent so that the apparatus will hang over an ordinary test-tube or other convenient vessel. The bottle is completely filled with urine, with which a piece of Fleischmann's yeast, about the size of a pea, has been thoroughly mixed. In putting in the cork it is necessary to be careful to exclude every bubble of air. If the apparatus be kept for a half-hour at a temperature of from 80° to 90° F., a bubble of gas will appear if sugar be present in the smallest quantity. The apparatus may be placed in the sun or near a heater, but the temperature should not be higher than 100°.

STRONTIUM FOR TAPE-WORM. — At a recent meeting of the Academie de Medecine M. Laborde said that he found that the salts of strontium had a very destructive action on the eggs or germs of the tenia. He made several experiments on dogs, and he employed the salts in man, obtaining very satisfactory results.

FORMULA FOR WINE OF COCA:²

R. Coca-leaves	3 lb.
Cognac	3 lbs.
Sherry wine	10 lbs.
Hungarian wine	3 v. l. M.

Macerate for several days and add seven grains of citric acid. Allow this mixture to stand for several days, and then filter.

Correspondence.

INEXPERT EXAMINATIONS FOR ARSENIC.

BOSTON, February 28, 1892.

MR. EDITOR: — I have been much annoyed, and my patients have been needlessly alarmed, in three separate households, by serious errors in the results of examination for arsenic; and in two of these households the wall-papers declared dangerous had been sold as harmless upon the guarantee of accomplished chemists. In a fourth case coming to my knowledge, harmless wall-paper, bought with a similar guarantee, was needlessly removed upon being declared dangerous by an inexpert analysis. One of my patients was very much frightened upon being told to consult a physician at once, as there were said to be albumen and casts in the urine, when I ascertained that there was no evidence of renal disease; and the urine was declared free from arsenic although a subsequent examination by a competent chemist revealed too large a quantity of arsenic to have come from wall-paper alone.

I write this to indicate the importance of having all chemical analyses for arsenic and all clinical examinations of urine made by persons thoroughly fitted for their work.

Respectfully yours, CHARLES F. FOLSOM, M.D.

¹ Medical News, January 9th.² Pharmaceutische Post, No. 27, 1891.

METEOROLOGICAL RECORD.

For the week ending February 20, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-meter		Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.	
	Daily mean.	Daily mean.	Daily mean.	Maximum.	Minimum.	Daily mean.	6 A. M.	6 P. M.	6 A. M.	6 P. M.	8 A. M.	8 P. M.		
S. 2.14	30.00	23	31	10	13	79	76	W.	E.	13	16	C.	R.	T.
M. 2.15	30.00	23	31	10	13	79	71	W.	W.	12	14	C.	C.	.38
T. 2.16	30.50	21	24	7	16	86	85	N. W.	N. W.	17	23	C.	C.	
W. 2.17	30.47	13	20	5	70	60	56	N. W.	N. W.	19	12	C.	C.	
T. 2.18	35.16	41	41	10	45	40	43	W.	N. W.	6	4	C.	F.	
F. 2.19	30.32	33	46	26	41	72	57	N. W.	E.	8	12	C.	C.	
S. 2.20	30.42	36	39	32	91	96	94	N. E.	N. E.	13	13	C.	T.	
avg.	30.26	34	19	66	65									.01

* O. cloudy; C. clear; F. fair; G. fog; H. hazy; R. smoky; R. rain; T. threat. falling; N. snow. [†] Indicates trace of rainfall. [‡] Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEBRUARY 20, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Percentage of deaths from			
					Scarlet fever.	Amebic fever.	Diarrhoeal diseases and group.	
New York	1,515,301	908	322	14.30	20.13	4.29	1.43	4.73
Philadelphia	1,046,964	—	—	—	—	—	—	—
Brooklyn	808,343	399	140	16.50	21.50	7.00	1.00	5.50
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,417	206	60	7.84	21.07	3.43	.49	1.47
Baltimore	454,429	—	—	—	—	—	—	—
Cincinnati	290,000	120	54	15.28	11.55	.76	2.81	9.12
Cleveland	282,000	86	33	13.92	16.24	1.16	1.16	10.44
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburgh	240,000	127	49	18.17	14.22	.79	.79	7.87
Milwaukee	240,000	96	41	21.00	15.75	2.10	1.05	14.70
Washington	230,000	130	38	29.23	34.30	.85	.85	2.55
Nashville	76,168	40	12	10.00	17.50	—	—	—
Charleston	63,165	—	—	—	—	—	—	—
Portland	36,425	17	9	5.88	41.16	—	—	5.88
Worcester	81,625	8	8	12.00	24.00	4.00	4.00	4.00
Lowell	71,200	53	24	9.10	1.82	1.82	3.64	—
Fall River	74,208	46	24	4.34	30.38	—	—	—
Cambridge	70,628	26	11	—	7.70	—	—	—
Lynn	53,727	27	8	7.40	33.33	—	—	—
Lawrence	44,654	—	—	—	—	—	—	—
Springfield	44,141	18	5	—	1.55	—	—	—
New Bedford	40,733	20	11	5.00	15.00	—	—	5.00
Salem	39,801	16	6	6.25	37.50	—	—	6.25
Chester	37,009	10	3	20.00	30.00	—	—	10.00
Haverhill	27,412	12	2	8.33	6.33	8.33	—	8.33
Lowell	27,000	12	2	16.67	33.33	—	—	—
Gloversport	24,651	—	2	—	—	—	—	—
Newton	24,379	—	—	—	—	—	—	—
Malden	22,031	8	3	12.50	12.50	—	—	—
Fitchburg	22,037	10	3	20.00	30.00	—	—	10.00
Watertown	18,750	9	3	—	—	—	—	—
Quincy	17,281	5	1	—	46.00	—	—	—
Wellesley	16,723	6	1	16.66	—	16.66	—	—
Northampton	14,306	3	0	33.33	—	—	—	33.33
Newburyport	13,947	4	0	25.00	25.00	—	—	25.00
Medford	11,079	2	0	—	—	—	—	—
Hyde Park	10,100	4	0	—	25.00	—	—	—
Brookline	10,158	4	0	—	25.00	—	—	—

Deaths reported 2,450: under five years 876; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoea, diphtheria, whooping-cough, fevers, &c.) 224, according to diseases 492; consumption 230; diphtheria and erysipelas 225; typhoid fever 21; measles 15; whooping-cough 14; cerebro-spinal meningitis 8; small-pox 2; typhus fever 2; malarial fever 1.

From erysipelas New York 10, Brooklyn 3, Nashville 2, Boston 1, Cleveland, Pittsburgh, Washington, Fall River and Chelsea 1 each. From typhoid fever Pittsburgh 8, Brooklyn 4, New York, Cincinnati and Washington 2 each, Milwaukee, Lowell and Lynn 1 each. From measles New York 13, Brooklyn and Worcester 1 each. From whooping-cough New York 6, Boston and Pittsburgh 2 each, Brooklyn, Milwaukee and Fall River 1 each.

From cerebro-spinal meningitis Brooklyn, Cincinnati and Washington 2 each, Boston and Lynn 1 each. From small-pox New York 2. From typhus fever New York 2. From malarial fever Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending February 6th, the death-rate was 26.2. Deaths reported 5,106: acute diseases of the respiratory organs (London) 761, influenza (London) 314, whooping-cough 240, measles 72, diarrhoea 38, diphtheria 36, scarlet fever 31, fever 30.

The death-rates ranged from 13.8 in Bradford to 39.6 in Northampton; 21.1 in Cardiff 25.3, Hull 22.7, Leeds 17.1, Liverpool 16.2, Liverpool 27.1, London 30.6, Manchester 24.2, Newcastle-on-Tyne 26.6, Nottingham 26.4, Portsmouth 30.6, Sheffield 20.9, Sunderland 20.8.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending February 13th, the death-rate was 23.1. Deaths reported 4,514: acute diseases of the respiratory organs (London) 560, whooping-cough 192, measles 66, diarrhoea 46, scarlet fever 39, diphtheria 34, fever 8, small-pox (Oxford) 1.

The death-rates ranged from 16.6 in Bradford to 32.0 in Nottingham; Birmingham 20.9, Brighton 24.6, Huddersfield 17.3, Leeds 17.9, Leicester 22.9, Liverpool 24.1, London 24.6, Manchester 24.9, Newcastle-on-Tyne 27.1, Sheffield 19.8, Sunderland 20.8, Wolverhampton 23.1.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 27, 1892.

V. C. B. MEANS, passed assistant surgeon, detached from Naval Hospital, New York, and to Navy Yard, New York.

GEORGE A. LUNG, assistant surgeon, detached from Navy Yard, New York, and to Naval Hospital, New York.

E. H. MAHESSELLER, passed assistant surgeon, detached from Marine Rendezvous, Baltimore, and wait orders.

F. J. B. CORDEIRO, passed assistant surgeon, detached from Marine Rendezvous, Boston, and to the U. S. "Adams."

EXAMINATIONS FOR GRADE OF ASSISTANT SURGEON, UNITED STATES MARINE-HOSPITAL SERVICE.

WASHINGTON, D. C., February 23, 1892.

A board of officers will be convened in Washington, May 2, 1892, for the purpose of examining applicants for admission to the grade of Assistant Surgeon in the United States Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examinations: (1) Physical, (2) written, (3) oral, (4) clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are conducted in writing, and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and the natural sciences.

The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination and will be commissioned in the same order, as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large marine-hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade. Assistant surgeons receive sixteen hundred dollars, passed assistant surgeons eighteen hundred dollars, and surgeons twenty-five hundred dollars a year. When quarters are not provided, commutation at the rate of thirty, forty, or fifty dollars a month, according to grade, is allowed.

All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. For further information or for invitation to appear before the Board of Examiners, address:

WALTER WYMAN, Supervising Surgeon-General, M. H. S.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—A regular meeting will be held at 19 Boylston Place, on Monday, March 7, 1892, at 8 o'clock, P. M.

Readers: Dr. J. B. Ayer, "The Third Year of the Influenza Epidemic"; Dr. S. H. Ayer, "A Case of Empyema, with Recurrence after Apparent Recovery"; Dr. F. L. Jack, "Operative Treatment for the Relief of Chronic Suppurative Affections of the Middle Ear. Report of Three Cases." Discussion by Drs. J. O. Green, C. J. Blake and others.

Report of Treasurer.

Report of Committee on Admissions.

Appointment of committee to nominate officers for the ensuing year.

JOHN C. MUNRO, M.D., Secretary.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT, SECTION FOR OBSTETRICS AND GYNECOLOGY.—A regular meeting will be held at 19 Boylston Place, on Wednesday, March 9, 1892, at 8 o'clock, P. M.

Dr. George W. Van Pelt will report a Case of Pyro-salpinx; Dr. W. L. Burrage will read on "The Electrical Treatment of Pelvic Inflammations." Dr. E. L. Burt will present a paper on "Inflammations of the Pelvic Organs."

GEORGE HAVEN, M.D., Secretary.

92 Pinckney Street.

ASSOCIATION OF AMERICAN PHYSICIANS. PRELIMINARY ANNOUNCEMENT.—The next annual meeting will be held on Tuesday, Wednesday and the morning of Thursday, May 24, 25 and 26, 1892, in the Medical Museum and Library, Washington, D. C.

The subject selected for discussion is Dysentery. Dr. William T. Councilman, as Referee, will consider the Etiology and Pathology, and Dr. A. Brayton Ball, as Co-referee, the Symptomatology, Complications and Treatment.

The following members will present papers: Henry M. Lyman, The President's Address; Charles Carey, The Production of Tubular Breathing in Consolidation and Other Conditions of the Lungs; Samuel G. Chew (Title to be announced later); William H. Parker, A Comparative Study of the Bactericidal Action of the Air; Francis T. Miles, The Treatment of Follicular Tonsillitis; George M. Garlands, The Morbid Anatomy of Leprosy; Hobart A. Hare, A Collective Investigation in regard to the Value of Quinine in Malaria Haematuria or Malarial Haemoglobinuria; A. Jacobi (Title to be announced later); W. W. Johnston, Treatment of Acute Dysentery by Antiseptic Colon and Rectal Irrigation; Thomas S. Latimer, Alcoholism; Morris J. Lewis, A Study of the Seasonal Relations of Chorea and Rheumatism for a period of fifteen years; Morris Longstreth (Title to be announced later); Francis T. Miles, A Case presenting the Symptoms of Laryngeal Paralysis with Recovery; William Pepper, Report of Cases of Glaucoma with results of Bacteriological Examination; T. Mitchell Prudden (Title to be announced later); George M. Sternberg, Practical Results of Bacteriological Researches; Charles G. Stockton, Misconceptions and Misnomers Revealed by Modern Gastric Research; William H. Thompson, The Significance of Intermission in Functional Nervous Diseases; Victor C. Vaughan, Certain Toxicogenic Germs found in Drinking-water; B. F. Westbrook, Studies in Hypnotism; James C. Wilson, Pulsating Pleural Effusions; George Wilkins, The Cold Water Treatment of Typhoid Fever.

HENRY HUN, Secretary, 35 Elk Street, Albany, N. Y.

RECENT DEATHS.

ALEXANDER LUMNITZER, M.D., Professor of Surgery in the University of Buda Pesth, died January 30th, aged seventy. He was knighted in 1866, became professor extraordinary in 1872, president of the Hungarian National Board of Health in 1878 and a member of the upper house of parliament in 1885. He was the author of several works on surgical and sanitary subjects.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Ophthalmological Society, Twenty-seventh Annual Meeting. 1891.

Manual of Operative Surgery. By Frederick Treves, F.R.C.S., Surgeon to and Lecturer on Anatomy at the London Hospital etc. Volumes I and II. Philadelphia: Lea Brothers & Co. 1892.

First Lines in Midwifery. A Guide to Attendance in Normal Labor for Medical Students and Midwives. By G. Ernst Hermann, M.B., F.R.C.P. Obstetric Physician to the London Hospital, etc. Philadelphia: Lea Brothers & Co.

The Human Figure: Its Beauty and Defects. By Ernst Brücke, Professor of Physiology, University of Vienna. With a Preface by William Anderson. Authorized translation, revised by the author. With 22 illustrations by Hermann Parr. London: H. Gravel & Co. New York: B. Westermann & Co. 1891.

Original Articles.

TWO FATAL CASES OF CEREBRAL DISEASE (ONE OF CONFUSIONAL INSANITY THE OTHER OF DOUBTFUL NATURE) FOLLOW- ING GRIPPE.

BY MORTON PRINCE, M.D.,

Physician for Nervous Diseases, Boston City Hospital.

THE following two cases of cerebral disease caused by the grippe are of interest because they illustrate the profound effect of the poison of the disease upon the central nervous system. One was a case of confusional insanity, the other was of doubtful nature. As a rule, confusional insanity ends favorably, but this case illustrates the possibility of fatal termination. Although the subject had suffered from chronic bronchitis for many years, his physical condition otherwise was good up to the time of his infection with the grippe, and therefore I think his previous physical condition contributed little towards the fatal result, although from reading, merely, an account of the case, it might seem otherwise.

Attention has often been called, and of late particularly by Althaus and Mills,¹ to the affinity of the poison of influenza for the nervous system. Although Althaus, it seems to me, goes too far in relegating the inflammation of the mucous membranes to a place of secondary importance and in considering the disease as an essentially nervous fever, still it does not seem to me that the action of the poison upon the nervous system in cases of the bronchitic type is regarded in practice as having the importance that should be attached to it. Symptoms and physical conditions are ascribed to general weakness and exhaustion, which are in reality due to what might be better called a paresis of the nerve centres. In other words, the so-called exhaustion of grippe is not an exhaustion in the true sense of the word, but is really the expression of a true neurosis which is due to the toxic or paralytic effect of the poison on the nerve centres, just as the paralysis of diphtheria is toxic and not exhaustive. When both pulmonary and abdominal symptoms are absent, the neurosis stands out prominently in the foreground and is plainly recognized; but when these symptoms are present their more strikingly objective character overshadows the neurosis which in consequence is apt to be overlooked or underestimated.² A prolonged convalescence with its train of nervous symptoms and even death then come not unfrequently as a surprise. The fatal result, so often unexpected, is fully as much, in my judgment, due to this neurosis as to the bronchitis. The latter, if occurring by itself, would not be sufficient to cause death.

The acceptance of these views must affect the after-treatment and the prognosis.

CASE I. The patient, a man sixty-six years of age, and a sufferer for the past thirty-five years with chronic bronchitis, was taken December 19th last with symptoms of an acute exacerbation. As the patient had had several such attacks in the past it was impossible, at first, to say whether or not the acute bronchitis was due to the grippe or was simply an increase of the old

trouble. There were no symptoms, in the beginning, to throw light on the etiology. Later, it became evident that his symptoms were caused by grippe. The fever was moderate and lasted about a week or ten days; the highest point reached was 102.5°, although it should be said the temperature might have been modified by the phenacetine, which was given in moderate doses.

The bronchitis was very severe. Very large quantities of muco-purulent sputa were raised in the twenty-four hours; and the patient suffered from intense dyspnoea, which prevented his lying down in bed. It should be said that repeated examinations of his lungs during the past year had shown the existence of marked emphysema, bronchiectasies, and abundant coarse and fine moist râles throughout the lungs. The apices were particularly affected, and the right one in particular gave physical signs of phthisis. Examination of the sputa had failed, however, to show the existence of bacilli, and while the objective signs simulated those of phthisis, the symptoms were all those of bronchitis. With the exception of great dyspnoea on exertion, and cough, particularly in the mornings, when the patient raised considerable quantities of muco-purulent expectoration, he had enjoyed fair health. His physical appearance had always been good and was in no way suggestive of phthisis. Dr. F. C. Shattuck, who saw the case with me in consultation, confirmed this view of the lungs, excepting that he considered there was fibroid condition also present.

After the first week of the attack of grippe, the bronchitis gradually and steadily improved until, at the end of his illness, it had subsided to its previous condition. The cough was moderate, troubling him but little, and the expectoration was comparatively slight. The sputa were again examined for bacilli, with negative results. The interest of the case centres in the nervous symptoms.

During the first week the patient suffered from marked depression, so marked, indeed, as to almost amount to melancholia. However, as it was known that he always became very much depressed when ill, it did not excite very much attention. During the next week, a stuporous condition developed. The patient frequently fell, if not into a sleep, at least into a somnolent condition while talking, and it was with difficulty that his attention could be held for more than a few minutes at a time. During the third week his mental condition changed again; the stupor disappeared; the melancholia gave place to a condition approaching exaltation. He appeared to be in abnormally good spirits, and to have entirely lost all apprehension on account of his condition. At the same time a peculiar kind of delirium now developed resembling in many respects that of delirium tremens. At first, it was limited to bad dreams; with these the patient was tormented, particularly at night, but also if he fell asleep in the daytime. By degrees the dreams persisted after he was waked up, and he seemed to find it difficult to throw them off. Then they persisted as false ideas and experiences during the waking state, and he became unable to distinguish between his dream life and his real life. By degrees hallucinations and illusions developed during the day; he saw people in his room, and objects outside in the street, which did not exist, and a chain of delirious ideas took complete possession of his mind. He found difficulty at times in expressing himself intelligently. Wrong words were

¹ An excellent editorial in a late number of this Journal has emphasized this subject.

² In the Journal of February 4th last, two cases are reported of the supposed effect of snuff-nail in producing a relapse (↑) with nervous symptoms. It seems to me these are plainly cases of neurosis due to the grippe, and illustrate the point made in the text.

interpolated in his sentences, and the words themselves slovenly pronounced. The mental confusion was marked in regard to his surroundings. He imagined himself in various and impossible situations. He recognized, however, everybody about him and the facts of his illness. In fact, his mental condition was, as has been said, very similar to that of delirium tremens. The marked difference was, that while he was, and had been, during the whole attack tormented by bad dreams, and he required hypnotics every night, sleep was easily induced by moderate doses. Hyoscin, in doses of one one-hundred-and-fiftieth of a grain, gave quiet sleep during the greater part of the night.

Examination of the urine showed the kidneys to be free from disease. Eight days before he died Dr. Jelly saw him with me in consultation. At that time there did not seem any reason for apprehending a fatal issue, but during the next few days his mental condition rapidly grew worse.

An interesting point in the case, and one which, to my mind, bears upon the pathology of such cases, was the fact that while his mental condition was progressively growing worse, his physical condition was progressively improving. The bronchitis was subsiding; his dyspnea was growing less; his appetite improved so that he took large quantities of food, in fact, more than he had been in the habit of taking previous to his illness, and his strength increased to the extent that he was able to sit up in a chair for seven or eight hours a day. His pulse remained strong and full up to the last few days of his illness, and ranged in the neighborhood of 90. When the hallucinations developed he was put back to bed, and he was treated with large doses of cardiac and cerebral stimulants. His mental condition grew steadily worse, and he died January 25th, thirty-nine days after being taken sick. It was only during the last two or three days of his illness that he failed physically, and on the last day he sank rapidly.

CASE II. This case I saw in consultation with Dr. John G. Blake, who has kindly given me his notes in the case.

The patient, a man, forty years old, had always been more or less affected with chronic bronchitis of moderate intensity. He was also of moderately alcoholic habits, depending upon the use of stimulants in rather excessive quantities, although never, perhaps, intoxicated. He was attacked with grippé in January last, and attended by Dr. Blake. He was ill two weeks, the principal symptoms being those of bronchitis. At the end of two weeks the symptoms subsided, and he recovered strength sufficiently to be up and about the house and even to walk a short distance to Dr. Blake's office; he still, however, continued weak.

At the end of about five days severe neuralgic pains developed in the scalp; these appear to have been intense, and the scalp became very sensitive to the touch. For two days, however, he appeared to be otherwise well, and talked rationally. He then became troubled at night with delirium, or dreams, which gradually persisted into the day. There had been no vomiting or convulsions. A delirious condition with hallucinations rapidly developed; and when seen by me, in consultation, on the morning of the fourth day, his condition was as follows:

He was in bed, but his muscular condition seemed to be strong; pulse, strong and full; not rapid, nor abnormally slow. He was in a stuporous condition,

although it was evident that his mind was occupied with hallucinations. When disturbed, he played with the pillow and moved about in bed. There was no paralysis of any kind: he protruded his tongue, and answered questions. His condition gave the impression of a meningitis. Insomnia had been marked. The temperature was not taken with the thermometer, but to the touch it did not appear to be raised. Dr. Blake says there never had been any suspicion of fever. Arrangement was made to transfer the patient to the hospital; but later some objection having been made, he did not go. "That evening his delirium," Dr. Blake says, "became even more marked and was of the muttering variety." He talked indistinctly and incoherently. He could not be roused to answer intelligently. The pulse continued full and strong. There was retention of urine and he required to be catheterized. The report of the night-watch was that he continued about the same until about 4 A. M. He then became more restless and began to fail. He died about 7 A. M. Thus it will be seen that the chief and almost only symptom was delirium preceded by neuralgic pain in the head. An autopsy was not allowed.

The diagnosis lay between meningitis and some form of toxic cerebral disease due to the poison of grippé. It was expected that after the patient's transfer to the hospital a more satisfactory study could be made, but his unexpected death prevented this.

REMARKS.

The first of the above cases was plainly one of confusional insanity, a name given by Wood, of Philadelphia, to designate the form of mental disturbance often met with following acute febrile diseases such as acute rheumatism, typhoid fever, grippé and even surgical operations. This form of brain disease has, of late, attracted much attention, both here and in Germany, and several monographs have appeared upon the subject. A number of cases are to be found reported in the medical journals, Osler, for instance, has reported five cases, of which four followed typhoid. Wood, who has most exhaustively discussed it, considers that pathologically it is due to the exhaustion of the nerve centres and not to the toxic effect of the specific poison of such diseases as above mentioned. He believes that its pathology is always the same, whether following a surgical operation, the puerperal condition or acute infectious diseases. These conditions induce a state of exhaustion which in turn brings about one of malnutrition of the brain. It seems to me that this view may be fairly questioned. It is undoubtedly true that mental disturbance may follow physical exhaustion, pure and simple, as, for example, when produced by starvation and exposure after shipwreck. Still, it seems to me that clinical evidence also points to the direct toxic action of the poison itself as the true cause in many, if not all, cases of acute infectious diseases. In the case just quoted, for example, it will be noticed that the first mental disturbance, namely, the melancholia developed during the few days of the disease before exhaustion, could properly be said to have occurred: and more than this, instead of the physical condition of the patient deteriorating as the mental disturbance progressively increased, on the contrary, the physical strength steadily improved while the stupor, hallucinations and other mental symptoms steadily grew worse. In fact, while the appetite, strength and the bronchitis were steadily improving, he was

mentally failing. Nor was there at any time in the course of the disease evidence of weakened function of the vital organs beyond a temporary gastric disturbance shown by an exceedingly furred tongue, due partly to over-feeding.

Taking these facts into consideration, and taking also into consideration the fact that delirium in grippa may be prominent on the first day without fever, bronchitis or other local symptoms (one example of which I have seen), and that it may also occur early in gonorrhonal rheumatism before any exhaustion has developed (an example of which I have also seen) I am disposed to consider the psychical disturbance as dependent on the direct toxic effect of the poison on the cerebral tissue. An analogous condition, and one beyond question, is the mental disturbance observed in Bright's disease. This distinction is of some practical importance because if the weakness, or rather, as I believe it should be regarded, the paresis, the mental and other symptoms occurring during and following grippa are simply to be regarded as evidences of exhaustion, the treatment is simple and the prognosis will have a more favorable outlook; but if these conditions are in reality toxic in their character, it is evident that the treatment of this nervous condition should be much more watchful and serious and the prognosis more guarded. I am certain that the surprise often expressed at the unexpected fatal termination of many cases of grippa is due to the profound toxic effect of the poison on the nervous system not having been recognized. It is not a mere weakness that we have to do with but a real paralysis of the nervous system. I am inclined to regard the great fatality in aged people as due only in part to the local lung complications, pure and simple, and at least in an equal degree to this nervous poisoning often resulting in paralysis of the heart. It is true that confusional insanity in the great majority of cases has a favorable termination, but the above case illustrates its dangers. I am sorry that the sudden termination of the second case, above described, prevented more careful study of the conditions it presented. I think the diagnosis must remain in doubt, but that it will lay between meningitis and toxic neurosis.

CASES OF ATROPINE AND OPIUM POISONING IN EARLY LIFE.¹

BY T. M. BOTCH, M.D.,
Visiting Physician to the Boston City Hospital and the Children's
Hospital.

THE following cases are reported more for their clinical interest than for making any precise deduction as to the amount of atropia or morphia which may produce death or be recovered from at any especial age in infancy or childhood. In fact, any such deductions must be based on an extremely large number of cases to be of any definite value, for infants and children appear at the same age to vary considerably as to the amount of these drugs which they can absorb and eliminate without physiological or toxic symptoms. A dose of belladonna may be taken without marked effect by an infant, and yet the same dose produce toxic phenomena in an older child; and in like manner we notice the same want of uniformity in the effects produced by opium and its alkaloids. The administration of both belladonna and opium, however,

plays so great a rôle in the treatment of diseases of infancy and childhood that cases where any approach to toxic symptoms have occurred when these drugs have been used, should immediately be put on record. In this way we shall, by degrees, learn to know what are the danger-signals and what limits we should hesitate to pass beyond at a given age. These records will also be of use in encouraging us not to despair of saving the patient's life in cases where the amount of the drug taken seems very formidable.

During my term of service at the City Hospital in 1891, a little girl, nine years old, was brought to my wards at 10 P. M. At about 7 P. M. on the same evening, the child stated that she had drunk part of the contents of a bottle containing a solution of atropine, two grains to the ounce. An emetic of mustard and water was given to the child at 9 P. M., before coming to the hospital, and this had produced free vomiting. The child, on entrance to the ward, was partly unconscious; pale; pulse 120, of good strength and regular; respiration regular, quiet and about normal rate; temperature 99°; tongue coated and dry; pupils widely dilated and not reacting. Convulsive movements chiefly confined to the upper extremities occurred at times. The urine was of a normal color, acid, specific gravity 1020, no albumen. The case did not appear to require any treatment by drugs.

On the following morning the child was comfortable with the exception of a slight headache. The pupils were still widely dilated. The urine was passed naturally. Three days later she was well and the pupils were reacting naturally.

The sister of the child just spoken of was brought into the hospital at the same time and with the same history and was placed in the wards of Dr. J. G. Blake. This little girl was four years old. She had been given an emetic two hours after drinking the atropine solution, and one hour before entering the hospital. The face was markedly flushed: the pupil of the left eye was fully dilated and did not react to light. The right pupil, which was the seat of an old iritis, did not dilate; the pulse was 160, regular, rather full and compressible; respirations 28, regular and quiet; temperature 100°. Every few minutes the patient had mild, clonic convulsions, affecting chiefly the muscles of the arms, legs and face. They were of short duration.

As the patient was in the stimulant stage of the poison, with convulsions, she was given two minims of Magendie's solution, subcutaneously. After a short time the patient quieted down and went to sleep. By midnight the respirations had fallen to 22, the pulse to 130 (of good strength), and the patient was quiet. On the following morning the pulse was 92 and the respirations 18; the child was drowsy and fretful and the pupil still dilated. Three days later the child seemed well, and the pupil was gradually contracting.

One-half to one grain of atropia has been considered a fatal dose for an adult so that the amount of atropia in the solution (two grains), presumably swallowed by these two children would appear to be a serious dose to be disposed of. The probability is that they did not get a grain each; but the bottle had only had a few drops taken out of it before they got possession of it, and was found empty after they both said they had drank some of its contents. The usual history, I believe, of belladonna or atropia poisoning is that the patients recover; and it is on this ground that the

¹ Read before the Obstetrical Society of Boston, January 9, 1892.

drug has been formerly used with such freedom (to the extent of tonic symptoms) in France in the treatment of pertussis.

Dr. Blake's patient was treated with the supposed physiological antidote of atropia, morphia; mine had no medicinal treatment, in accordance with certain opinions that morphia is not indicated in these cases.

A little girl, two years old, was brought to the Children's Hospital during my service, in the morning at ten o'clock, by her father, who said that the mother had tried to poison the child in the night by giving it a teaspoonful of laudanum. It had vomited the laudanum, and the same dose was then repeated and possibly some more later.

The child was cold; temperature 97°; pulse slow, about 50-60; respirations 6 to 10 in the minute; pupils tightly contracted, not reacting; child semi-conscious. Atropia ($\frac{1}{10}$ gr.) was given subcutaneously, and the child kept continually moving by relays of nurses, who slapped it and applied electricity. Strong coffee, in teaspoonful doses, was given every hour, and the atropia repeated, with intervals of about three hours, twice. The child gradually grew brighter towards evening; the pupils dilated widely; a rash came out on the chest; and the child in a day or two was entirely well.

In connection with these cases I found of considerable interest, the examination of an infant five months old, whom I was called to see in consultation; the diagnosis had been made of tubercular meningitis.

The history was that of a healthy, breast-fed infant with a healthy mother. For two weeks there had been symptoms of fretfulness, probably caused by the teeth. Had had a cough and cold in its head for two days, and on the second day had been much more restless, and in the afternoon screamed a great deal. A mixture of fifteen drops of laudanum in thirty teaspoonsfuls of water was ordered, and during the night it was given teaspoonful doses. During the night the hands and feet were reported to be cold and the baby to be almost unconscious. On the following day when I saw it, it had contracted pupils, cool skin, temperature 98° F. (rectal), fontanelle a little depressed. Pulse 120, regular; respirations quiet, not especially slow. Did not notice, but could be roused, and would then cry vigorously and as though it were freiful at being disturbed.

The attending physician had already told the family that it was a case of tubercular meningitis, and had ordered the laudanum to keep it quiet; it was supposed to have taken eight teaspoonfuls (four drops of laudanum). I advised atropia ($\frac{1}{10}$ gr.), which was given at once by the mouth. Four hours later the pupils were reported to be somewhat less contracted, but reacting very sluggishly; an hour later another dose of atropia ($\frac{1}{10}$ gr.) was given, and the pupils then dilated, the infant grew brighter and recovered, with an efflorescence (probably from the atropia) on the chest and face for a few hours.

A little girl, seven years old, was given what was supposed to be thirty-five drops of paregoric at 3 A. M. At 6 A. M. it was noticed that she breathed heavily, and at 7 A. M. she could not be aroused. I saw her at 8 A. M., when, although very sleepy, she could be aroused. The pupils were contracted and did not react; the pulse was rather slow; the respirations natural. She was made to vomit freely, and belladonna was then given in the form of tablets (ten

minims). No result was obtained from the belladonna; and during my temporary absence Dr. S. E. Wyman took charge of the patient, and gave her atropia ($\frac{1}{10}$ gr.) subcutaneously, at 10.45 A. M. The pupils then dilated, and she made a rapid recovery.

An analysis made by Prof. William B. Hills showed that, instead of the supposed paregoric, the thirty-five drops contained fourteen one-hundredths of a grain of morphia.

In my service at the Infant Hospital, I meet every year with young infants who have been drugged with small doses of opium, presumably paregoric. The drug when first given them in their homes has quieted them; but larger doses becoming necessary to keep them from crying, the parents become alarmed, as they can only be quieted by the drug, and they are sent to the hospital for treatment. Their advent destroys the peace of the wards for usually four or five days. They cry loudly and continuously, and only shut their mouths to swallow their food. They are usually considerably atrophied, and show gastro-intestinal disturbance; but they evidently are not in pain, and are crying for what they crave for, paregoric. This, if offered to them, they will take with far greater avidity than their food, but it only excites them to still greater clamor. The treatment is to absolutely withhold the drug from them, and after a number of days they apparently forget all about it, and soon begin to eat, grow and behave like other babies.

I mention this class of cases to possibly aid the physician in detecting them, where in private practice the nurse may be offsetting the good effects of a carefully prepared food, by giving a few drops of paregoric at night to insure the sound slumber of her charge.

ASTIGMATISM AS AN ELEMENT OF REFRACTION, AND ITS OBJECTIVE STUDY BY THE OPHTHALMOMETER OF JAVAL AND SCHIOTZ (MODEL OF 1889).

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THE student of the current ophthalmic literature of the present day will not be obliged to read very far on the subject of refraction and its errors to observe how prominent a place is being given to astigmatism as an element of these errors. Although the subject is an old one, and it is now a hundred years since Thomas Young first made a study of the subject in his own person, and it was christened with its present name by Whewell, in 1846, nevertheless, the last word is not yet spoken on astigmatism. Some of our most experienced ophthalmologists of to-day are studying the subject with more care than was formerly bestowed upon it, carefully noticing small fractions of a dioptre of astigmatism, and the axis of the meridian, and prescribing weak cylinders, where, a few years ago, these were not looked for, or, if found, were ignored. But it is just the correction of these apparent trifles, in many cases, that is giving our patients a great deal of relief, and ourselves a good measure of satisfaction. Probably if the whole truth could be known of the past and present failures, or only half-satisfactory results, in prescribing glasses for the relief of the various forms of asthenopia, this one element of astigmatism has been, and still is, the one sly fox that is most

difficult to run to ground. He it is who most persistently eludes our grasp, plays fast and loose with our best-laid schemes, and leads us into many a provoking decoy. Or, as Fox and Gould ("Diseases of the Eye") state it: "Astigmatism is an invisible and elusive imp of mischief, requiring much keenness and patience to hunt him down. His hiding-place is the ciliary muscle; his disguise, amblyopia."

Is it to be inferred, then, that because we are hearing and reading more of this trouble of late years that it is on the increase? Formerly hypermetropia, pure and simple, and uncomplicated myopia, were believed by many ophthalmologists, not all, however, to stand in the fore-front of the troublesome enemy, and many and many are the cases reported where no mention is made, or record given, of astigmatism, but simple spherical glasses were given, and most gratifying results soon followed, or were reported to have followed — proving again that we can find almost anything we are looking for, if we have a belief that we wish to establish. Just now the muscles external to the globe, and astigmatism are standing forth to be counted, and as rivals for first place. The muscles are making the most noise, to be sure, but it is the astigmatism that is doing the most mischief.

Probably, we cannot say that astigmatism is increasing, but perhaps our knowledge of it is improving. It undoubtedly can be said with truth that a nervous irritability, a neurasthenia, of the Americans is being more and more noticeable in the last ten years. And since la grippe has worked its peculiar work over nearly the whole of our country, there are many thousands who are finding themselves reduced in vital force, and unable to withstand many little ills and pains that before they took no note of. How often do we hear at the bedside, in our offices, and on all sides, the expression, "Since I was ill with la grippe!" And since that time some trifling pain or distress has become a thorn in the flesh."

Dr. J. J. Chisolm, of Baltimore, in a paper read at Washington, in May, 1891, advocating the use of low grades of cylinders, formulates this axiom: "Headache under eye use, with acute vision, in by far the majority of cases, means astigmatism, and usually of a low degree. . . . I often wonder what has become of the hosts of hypermetropic eyes that I formerly saw and treated with spherical convex lenses. . . . The same class still come to me from other specialists, who are holding the views that I formerly acted upon before I found out my mistake."

Dr. W. F. Mittendorf, of New York, in a paper in the *Medical Record*, July 18, 1891, gives his testimony in favor of giving cylinders of as low power as one-half or one-quarter of a dioptric in many cases of asthenopic headache.

Dr. L. S. Dixon, of Boston, has "long been an intense believer in the benefits resulting from the correction of very small errors of refraction, particularly of astigmatism."¹

But I presume no one would advocate such careful and exact correction of uncomplicated hypermetropia or of simple myopia as is indicated by these quotations regarding astigmatism, showing that the tendency is to promote this latter fault to a more and more important place. Moreover, it is being studied objectively in the last few years, and this has always been a more exact and trustworthy method in the science of medicine than

the subjective method. For example, compare our knowledge of diseases of the heart and lungs since auscultation and percussion became a branch of our science with the period when subjective symptoms and examinations were relied upon. Consider the fine shades of distinction the neurologist can now make in his differential diagnosis by his objective study of his cases, rather than by a subjective examination. Likewise, how much now can be learned in renal diseases of our patients' condition, though no questions be asked! So, in some measure, at least, the modern methods of objective study in ophthalmology is advancing this branch of medical science. Noyes says: "The more we can rely on objective methods the better." The objective methods most in use are, of course, the ophthalmoscope and the ophthalmometer. Some ophthalmoscopists claim they can detect an astigmatism as low as 0.25 dioptric, and locate its axis. Whether they can do this or not it is fully acknowledged by our best authorities that it is almost impossible of accomplishment, and it is not claimed by the vast majority of examiners. We must look through the lens, and unless full mydriasis exist, it is difficult to exclude accommodative effort on the part of our patient, to the exactness of fractions of a dioptric. The other method is by the ophthalmometer, and it is this instrument that shall most interest us in this paper.

It may be well to review some of the chief features, and study some recent statistics of astigmatism at this juncture. Very few, indeed, are the cornea that are perfectly symmetrical and of equal curvature in all their meridians, and it is a well-recognized rule that there is a "normal astigmatism" of from one-quarter to one-half of a dioptric. The two meridians of the cornea which differ from each other in their curvature, and likewise in their refractive powers, are called the *principal meridians*. They are the vertical and the horizontal, or nearly in these planes, and stand at right angles to each other, and are the meridians of greatest and least refraction.

The vertical has a shorter radius of curvature than the horizontal, and a ray of light passing through it comes to a focus at a point anterior to the focal distance of a ray passing through the horizontal, which is the meridian of lowest refraction. Or, in other words, the focal distance of the vertical meridian bears a similar relation to the retina as does the hypermetropia eye — it is too short: while the horizontal bears the relation to the retina of the myopic eye — it is too long. This is the law, but to it there are exceptions. The axis may vary from the vertical to either side to the amount of 40°, and likewise from the horizontal. But the law holds good even then, that the meridians of unequal refraction will stand at right angles to each other. We have astigmatism "with the rule," when, in the hypermetropic the correcting plus cylinder stands at 90° or vertical; and in myopic astigmatism the minus cylinder is at 180°, or horizontal.

But where, in a case of hypermetropia astigmatism, a plus cylinder can be used only at 180°, or in a case of myopic astigmatism a minus cylinder can be used only at 90°, and in either example we have "astigmatism against the rule."

Mittendorf, in the paper referred to, examined one thousand cases of refraction. Of these, there were 111 cases of simple myopic astigmatism, and 626 cases of simple hypermetropic astigmatism. Of all kinds of astigmatism the amount reached as high as 83 per

¹ New York Medical Journal, March 28, 1891, page 333.

cent.; 119 of myopic, and nearly 700 of hypermetropic, astigmatism. In the hypermetropic cases the astigmatism was with the rule 418 times; against the rule, 33 times. In the myopic cases it was with the rule in 80 cases, against the rule in 21 cases.

In 1888 Dr. Swan M. Burnett, of Washington, examined by Javal's ophthalmometer 576 healthy cornea. Of these the horizontal meridian was of lowest refraction (astigmatism with the rule) 420 times; the vertical was of lowest refraction (astigmatism against the rule) 20 times.

In 1886 Dr. Kelch, of Louisville, Ky., published examinations on 512 cases of astigmatism, taken from the records of Dr. Dudley S. Reynolds, of Louisville. In the right eye 448 cases, in the left eye 452 cases. In the former cases the astigmatism was with the rule 377 times, in the latter cases it was with the rule 374 times.

Referring again to Burnett's interesting statistics, we find in his 576 cases there were but 55 cases of simple myopia, while of myopic astigmatism there were 140 cases. Simple hypermetropia was present in 59 eyes; hypermetropic astigmatism in 96 eyes. In 55 eyes there was compound hypermetropic astigmatism, and in 36 eyes compound myopic astigmatism; in eight mixed astigmatism. In Mittendorf's cases there were 111 cases of simple myopic astigmatism; 626 cases of simple hypermetropic astigmatism, and of mixed, 21 cases. The law regarding the axes of the principal meridians holds good, also, in cases of compound hyperopic, and compound myopic, astigmatism. But the cornea alone is not the only seat of this refractive error, for the lens participates in some small degree in a certain per cent. of cases, and the combined corneal and lenticular trouble gives us the "total astigmatism."

Javal says that corneal astigmatism almost always represents the total astigmatism. In but four eyes of Burnett's 140 cases of myopic astigmatism, was the total astigmatism greater than the corneal; in 11 it was less. In his 96 cases of hypermetropic astigmatism the corneal was greater than the total in four cases; in two it was less. The corneal astigmatism was against the rule in 18 cases, while the total was against the rule in 42 cases. The lenticular astigmatism is due to some oblique position of the lens, or some lack of symmetry in its outline, and also through an effort of accommodation which is more or less constantly going on in the ciliary muscle and lens to make amends for this trouble at the very threshold—the corneal astigmatism. And again, nature has tried to adjust the internal arrangement to correct the corneal trouble, for the meridian of greatest lenticular refraction is more often horizontal than vertical; whereas, as we have seen, the opposite condition prevails in the corneal astigmatism.

It is well known that the accommodation is much more active and important in hypermetropia than in myopia, so it is in hypermetropic astigmatism over the myopic. Hence it is in young subjects, while yet the lens is plastic and the accommodation active, that quite a degree of astigmatism can be, and often is, covered up. But let debilitating sickness come and the accommodative power, like all muscular force, be depressed, and at once this hidden fault of the cornea is revealed. Likewise as middle life approaches, the hardening of the lens, incident to this period, curtails the accommodation power, and again a small amount of astigmatism,

unknown before, begins to be troublesome. And yet all through life it is the lower grades of astigmatism that keep up the more persistent effort of the ciliary muscle, and maintain the conflict between the powers that be and the powers that would be. In the higher grades the retina has always been accustomed to the blurred outlines and distorted figures, and accepts them with but little rebellion. The lower grades, also, are not incompatible with good distant vision, before the middle period of life approaches, but accommodation must be used to accomplish this. Javal himself had astigmatism equal to 2.5 dioptres, but at the age of twenty-four could see the stars distinctly. Dr. Chisolm, in the article referred to, says: "I find vision $\frac{2}{3}$ in one-third of my astigmatic cases, and this good vision among my most suffering patients. The most marked relief, and the most brilliant results from the adjustment of cylinder glasses, I obtain among this class." We have all, I presume, seen very many cases, that would not accept a cylinder, even of low grade, kindly, or be improved by it for distant vision, yet in reading and in near work received a great deal of relief with this same cylinder.

And it is in just such cases that the objective methods, and especially by the ophthalmometer, are shown to be superior to any subjective examination. The ophthalmometer of Javal and Schiötz (model of 1889) leaves little to be desired in the instrument. So accurate and rapid is it in its operation that many a time in a good light have I measured the astigmatism in dioptres, and located its axis in both eyes in two minutes by the watch. Dr. H. B. Noyes, of New York, says of it: "During the past four years I have constantly made use of it in my private practice and can commend it very greatly. . . . For rapid work, and especially in public institutions, this instrument is invaluable. For the young, the confused, the dull, the amblyopic, it is most excellent." Burnett, of Washington, considers it one of, if not the, most important instrumental means for the diagnosis of astigmatism.

Dr. D. B. St. John Roosa, of New York, says of it: "All the previous methods of determining the existence, degree and axis of astigmatism, after twenty-five years of experience, I consider much inferior to this."

This instrument will certainly detect any corneal astigmatism that may exist; if we fail to rightly interpret it or its angle, and give relief, these are not the faults of the instrument. From my experience with it for the past two years, in public and private practice, I believe it to be a very reliable and accurate indicator of corneal astigmatism, both of the amount and of the axis. I am more and more inclined to follow its readings closely, more closely, perhaps, than the accepted rules call for. The rule given by Dr. Bull, of Paris, is: Give the patient, in astigmatism with the rule, 0.5 dioptre less than the instrument indicates; and in astigmatism against the rule, add 0.75 dioptre to the findings. Dr. Burnett in his latest article² on this subject thinks Dr. Bull's allowance of three-fourths of a dioptre too high for the majority of cases. In this same article Dr. Burnett speaks in the highest praise of the ophthalmometer and has nothing to retract from his former praise of it. In an article³ by Dr. Carl Koller (the discoverer of cocaine anesthesia)

² Journal of American Medical Association, September 5, 1891, page 234.

³ Ibid., September 13, 1890, page 380.

thesis) on this same topic, the highest praise is bestowed on this instrument in the study and treatment of astigmatism. This observer believes that astigmatism produced by tilting of the lens to an oblique position, and producing a constant, static factor, "is comparatively a very rare thing." But that dynamic astigmatism, produced by irregular contraction of the ciliary muscle, is most always the variety present. This tilting of the lens was assumed by Tscheiring. Bull also believes it is the explanation in many cases. In the opinion of Dr. Burnett it "is much commoner than is generally allowed, particularly as a corrective of the normal astigmatism of the cornea." It is a subject on which a difference of opinion exists, and it must be studied carefully to determine the question first objectively, afterwards subjectively and under full mydriasis.

But we have seen by the foregoing statistics, and by Javal's statement, how nearly the corneal astigmatism represents the total. If then we have an instrument that accurately measures the former, why may we not expect relief from the whole trouble after a short interval of use in which the accommodation is quieted and relieved? It is believed that the tilting of the lens does not occur in a large per cent. of cases, while accommodative effort does exist very largely. And for this reason, I say, I am inclined to depart from these rules, somewhat, especially in the lower grades of astigmatism, and when I am trying to give relief to asthenopic symptoms on near work. For example: A book-keeper, aged thirty, vision each eye $\frac{1}{2}$, H. M. each eye 0.25. Javal showed in right eye 0.50 dioptr, axis 90°; left eye hardly 0.50 dioptr, axis 90°. Ophthalmoscope showed about one dioptr of hypermetropia. Glasses were given as follows: right eye, + 0.25 S. ∞ + 0.50 cylinder, axis 90°; for left eye + 0.50 S. ∞ 0.25 cylinder, axis 90°. He reported ten days later, having used these constantly for writing and reading, the greatest relief at his work. The blepharitis of some months' duration had almost wholly disappeared. He was now reading with comfort in the evening, a pleasure he had been obliged to forego for months; and, as he expressed it, he supposed he must continue to look from his books at short intervals to give his eyes relief, as he had been doing for a long time. But no such inclination existed now and he could continue at his work uninterrupted. It may be said this man would have received equally good results had I given him a + 1 D. spherical. Possibly; but it may be said, also, he would have been made comfortable had I given only the cylinders. But certainly with the combination he was made happy, which is quite enough for him and for me to know.

Or, another example: A patient, age twenty-nine, vision = right eye $\frac{1}{2}$, H. M. 0.25; left eye $\frac{1}{2}$, no H. M. Javal showed no astigmatism in right eye, and 0.50 D. in left, axis 120°. I remarked that I found a trifle more error in the left than in the right eye. He said it was always the left eye that first became painful and gave him the most trouble in his near work. It will be noticed the angle is at 120°; but he would accept even this weak cylinder at no other angle. But in patients who have astigmatism against the rule, more asthenopia is caused by low grades than in the higher grades that are with the rule. This patient received great relief in reading and all close work by the use of these glasses, which were as fol-

lows: right eye, + 0.50 S.; left eye, + 0.25 S. ∞ + 0.25 cylinder, axis 120°.

Again, in a book-keeper, aged thirty, the vision was right eye $\frac{1}{2}$ H. M., .75 D.; left eye the same; glasses over both eyes, H. M. was 1.25 D. Javal showed 0.50 D. in each eye, axis 90°. This patient had been troubled with headaches in back of head and neck for months, and had been for some weeks under treatment for dyspepsia, believing the headaches came from this. No relief came from this treatment. He was given glasses for near work as follows: right eye, + .75 D. ∞ + 0.50 cylinder, axis 90°; left eye, same. After having used the glasses ten days at his near work he reported that from the first the headaches left him completely, and he had been entirely free from them since. There was no blepharitis in this case.

A girl, age ten, had a well-marked convergent strabismus of right eye. This patient had 4. dioptres of astigmatism in right eye, axis 90°, and 3.50 dioptres in left. She has worn glasses for four or five years, given by one of Boston's most careful ophthalmologists. And yet these were simple spherical lenses of four dioptres, and the parents had never heard of astigmatism. The ophthalmoscope showed four dioptres of hypermetropia. She has worn glasses of + 2. D. ∞ + 3.75 cylinder, axis 90°, on right eye, and on left + 2. D. ∞ 3.25 cylinder, axis 90°, for three weeks with great relief to headaches from which she suffered. Surely, with the ophthalmometer no one would fail to detect this high degree of astigmatism. It is rather remarkable that in four children in one family, a boy aged twelve, another aged fifteen, a girl aged eighteen, and sister aged twenty-four, all being myopic, that all should have astigmatism against the rule, as indicated by Javal, and subjectively they would accept a plus cylinder only at 180°, or a minus at 90°.

I have given these few examples as members of a class in whom, I think, we may follow the instrument more closely than Dr. Bull's rules indicate; and also to show how the ophthalmometer starts us on the right course in our examinations. Moreover, some competent observers believe more serious mischief than asthenopia may, and sometimes does, follow uncorrected astigmatism. The observations of Scheen show that strain of accommodation in astigmatism may be productive of glaucoma and cataract. Dr. Samuel Theobald, of Baltimore, found that where the meridian of least refraction was vertical (astigmatism against the rule), this variety of astigmatism was in almost every instance associated with glaucoma. He believes that the slightest degree of astigmatism of this character almost always gives rise to trouble, and if it amounts to not more than 0.25 D. requires to be corrected. Hyperemia of the ciliary body is particularly active in this form of astigmatism. This causes an increased flow of fluid into the vitreous, and let the drainage of the anterior chamber be a little at fault, and we have all the required conditions for glaucoma. Dr. Roosa tells us that Professor Fanas, of Paris, believes that astigmatism is usually the exciting cause of strabismus, and I know personally that Dr. Roosa himself shares in this belief.

If, then, all cornea be irregular, must all eyes have cylinders before means? By no means; but in eyes with good distant vision, and which are obliged to do close work, and in which blepharitis and congestion exist, and perhaps also more pronounced asthenopia, if

astigmatism is found even in small degree, I believe in fully correcting it in the glasses we give for close work.

Some of the advantages pertaining to the use of Javal's instrument have already been spoken of, but the chief advantage of all is that it does away with the use of atropine, or any other mydriatic, in the vast majority of cases. I know this statement will not be, and is not, accepted by many ophthalmologists. But those who have used the instrument the longest time and most carefully are the ones best qualified to pass an opinion. Certainly, if it be true that atropine need be used only infrequently rather than commonly "it is a consummation devoutly to be wished." This is the one feature of examination for refraction that patients detest at, both from loss of time and the great annoyance it occasions. The cornea is the seat of astigmatism, but the cornea is not symmetrical in its various meridians, and a difference in curvature exists, also, between the central and the peripheral portions, being more sharply curved in the central than in the peripheral portion. Is it rational then to try to hunt down any small error like this by bringing a much larger area of the cornea into the field of vision than is ever found there in a normal, healthy pupil? But mydriasis does this unavoidably.

Some of our best observers speak of using a mydriatic in testing for astigmatism as follows:

Landolt says: "We very seldom have recourse to atropinization for the determination of astigmatism."

Dr. John Green says: "It has been the practice of the writer to abstain from the use of atropine in measurement of astigmatism, except in a few cases of special difficulty, and never to adopt a measurement made under full mydriasis until it has been verified or corrected by other tests, made after the pupil has returned to its normal size."

Dr. Mittendorf says: "In the lesser degrees of astigmatism atropine should never be used, as the results obtained are often misleading, and I have often found that not only the strength but even the axis of the cylinder, determined under atropine, will not be accepted by the patient after the effects of the mydriatic have disappeared."

Dr. Roosa, in speaking on this same subject in connection with Javal's ophthalmometer, says: "A release from the use of atropine and so forth is afforded by the use of Javal's ophthalmometer. In the hands of those who have carefully practised its use, it simplifies the problem of the determination of astigmatism very much. . . . To use the ophthalmometer with exactness, however, one must spend a little time in practising with it. It is not necessary to paralyze the accommodation, except in very rare cases of spasm, and then for therapeutic purposes, if we can once exactly determine the degree of astigmatism. This is the key to the problem in the diagnosis of the causes of asthenopia; with that solved we can soon determine by the ophthalmoscope on the test letters, without the use of any mydriatic, even once, whether to advise a convex or a concave cylinder, and whether or not an additional spherical will be needed. . . . I do not now use atropine for the determination of the degrees or kind of error of refraction once, where I formerly used it thirty times."

Dr. Noyes, on the same subject, says: "The whole problem may often be solved at a single sitting and without atropine."

But ought we not to use atropine in young subjects? I would instance the following case:

A school girl, aged sixteen, had constant headache, and working over her books was impossible without great suffering. She had vision: right eye $\frac{2}{3} + \frac{1}{3}$ W. + 1.75 D. spherical; left eye $\frac{2}{3} + \frac{1}{3}$ W. + 1.75 D. spherical. Javal showed astigmatism in right eye of 0.50 dioptric, axis 90°; in left eye 3 dioptries, axis 90°. Ophthalmoscope showed 4 dioptries of hypermetropia in each eye. No atropine or other mydriatic was given, but glasses were prescribed at once as follows: right eye + 4 dioptries spherical; left eye + 1.75 D. S. C + 2.25 D. cylinder, axis 90°, to be worn constantly. She reported four weeks later at the Manhattan Eye and Ear Hospital. She had worn her glasses constantly and had returned to her studies; the headaches had entirely left her from the first, and she was enjoying her life, her books and her glasses.

If a case of this complexity and amount of refractive error in a school girl of sixteen could be relieved and made happy, without the use of any mydriatic, why may not any case?

Or, take an older subject: A lady, age forty-seven, vision: right eye $\frac{2}{3}$; left eye $\frac{2}{3}$. Javal showed 3 dioptries in each eye, axis 90°; the ophthalmoscope showed in each eye about 1.50 D. of hypermetropia. The glasses given were these: right eye + 1.50 D. S. C + 2.50 D. cylinder, axis 90°; left eye + 1.25 D. S. C + 2.50 D. cylinder, axis 90°. This lady had for years been trying to find glasses that would give her comfort in reading and sewing, and she had been examined by very good men. But the ophthalmometer revealed the whole story in less than five minutes. She assured me at the outset that she was myopic and had been for years. She uses these glasses with really the utmost pleasure, and has lately secured a duplicate of the prescription. She says it is the first time she has seen the eye of a needle, but she sees it now and wonders at its size.

I cite these few cases to show what may be done in the higher and the lower grades of refractive error and astigmatism by the employment of the modern and perfected methods of objective examination, and without the use of atropine, for in none of these cases was a mydriatic used. It is very rare indeed that I use it, but I do rely upon my ophthalmometer for the amount and axis of the astigmatism, and in a room painted dead black in all parts, with a tin tube over my gas chimney with a small opening in it through which I receive light for my ophthalmoscope mirror, I can learn the remainder of the refraction (for in such blackness the accommodation will, in a great measure, soon relax), certainly to an approximation as near as we wish to correct it.

If these principles, so hastily reviewed in this paper, are correct principles, and this method of practice has sufficient merit to be classed in such good company, it certainly saves our patients a vast deal of annoyance, and no little loss of time, and time is sometimes money. If the method is wrong I have yet to learn why it is so, or to see cause to regret the results obtained.

It is reported that an imperial irade has been issued forbidding the use of cocaine and sulphonal throughout the Turkish empire.

Clinical Department.

THE CONTAGIOUSNESS OF ERYSPIELAS.

BY WALTER REED,
Assistant Surgeon U. S. A., Fort Snelling, Minn.

In the JOURNAL of February 4, 1892, Prof. J. C. White, of Harvard, writing concerning "Some Dangers of Infection Incidental to Professional Life," says: "With regard to the contagious character of erysipelas diverse opinions prevail." Again: "Common belief has it that there is great danger of such communication, an opinion largely held apparently by our profession as well. I do not doubt the possibility of such transference, but I believe that it rarely occurs; I refer to the ordinary superficial forms of the affection. In the great number of cases that I have treated I have not known a single instance in which a second member of the family, nurse, or medical attendant has become affected."

As I have had an experience bearing directly upon the point at issue, I beg to submit it. During the fall of 1883, Lieutenant B. was attacked with facial erysipelas of a moderately severe type, the disease commencing over the bridge of the nose and spreading rapidly over the face and scalp. He was carefully nursed by Private A., who remained the greater part of the time in the room with him, and who slept in an adjoining room.

About the time Lieutenant B. was convalescent — some twenty days from the beginning of the attack — Private A. became engaged in an altercation and received a contused wound over the left orbit. This wound was dressed by the writer, the day following its receipt. The next day erysipelas appeared in the edges of the wound, rapidly extending to scalp and lower face. Now, I will admit that it would be perfectly fair to conclude that Private A. had probably infected his wound with the *streptococcus pyogenes*, which had remained on his fingers since his attendance on Lieutenant B., or that the writer had infected the wound; for we had both repeatedly applied cloths to the erysipelatous surface of the first patient.

However, be this as it may, Private A. was placed in a room by himself at the post hospital, and Hospital Attendant K. detailed to nurse him. Although this man did not sleep in the room, he virtually occupied it the greater part of the time, as the patient was troublesome and required almost constant attention.

Three weeks later, while A. was convalescing, Hospital Attendant K. was attacked with facial erysipelas and was put to bed in the same room with the second case, and Private S. detailed to nurse him.

Before Attendant K. had recovered fairly, Private S. was stricken down with the same disease and was placed in a separate room. He was nursed by Acting Hospital Steward G., who volunteered his services for this purpose. He was told that he need not remain in the room any more than was absolutely necessary to look after the wants of the patient, but as the steward had no fear of the disease, he was constantly in attendance, and spent a part of each night with the sick man.

When the foregoing cases had recovered, the two rooms were thoroughly disinfected, walls and floors being wiped down with bichloride solution, and afterwards exposed to fumes of burning sulphur.

Three weeks from the commencement of Private

S.'s case, which had not been severe, Acting Steward G. was attacked with facial erysipelas of a very severe type, and came near dying.

As there seemed to be no end to this succession of cases transmitted from patient to attendant, I requested the detail of four men to nurse this latter case; each man to be on duty six hours, and during this time to remain in the room as little as possible; free ventilation of the room to be enforced, and while off duty to remain in the open air as much as possible. Under this system of nursing, our little epidemic ended.

There had been no cases of erysipelas at the station prior to Lieutenant B.'s case, and none occurred during the following seven months of my stay at the post. I believe that the second patient would have had the disease, even had he not suffered any traumatism. I think that this conclusion is perfectly justifiable in the light of the occurrence of the subsequent cases, without any break in the integument. I know not how the *streptococcus pyogenes* gained access to the circulation of those patients. Each case began with soreness and congestion of the pharynx with some swelling of the lymphatics of the neck. This was slight and soon subsided. There was no formation of abscesses beneath the skin, except in the last case, in the loose tissue around the left orbit. All were young men in the prime of life.

Looking at the matter from my standpoint, I should say that there is good cause for the common belief that erysipelas can be communicated from patient to attendant.

TWO OVARIOTOMIES.

REPORTED BY BENJAMIN D. GIFFORD, A.M., M.D., CHATHAM, MASS.

Two cases of ovarian cysts which came under my observation during the second week in December, 1891, for the removal of which laparotomies were performed, illustrate in a remarkable manner the value of this operation, not only when undertaken for the deliberate cure of the affection, but also as a means of saving life when the conditions appear unfavorable and the patient evidently about to die.

The first case, that of Mrs. H., age thirty-six, childless, was one in which peritonitis was present and threatened life. She had been to Boston and had undergone a somewhat rough handling in the repeated examinations which she had received in a public clinic, and after a ride of nearly one hundred miles home was taken with a chill, which developed a peritonitis. This was of an active type, generally diffused and sufficiently severe to call for the gravest apprehensions for her recovery. Under the circumstances I advised an operation as the means best calculated to give her a chance for life. Accordingly I telegraphed for Dr. Henry O. Marcy, of Boston, who came down and operated. The tumor, which weighed sixteen or eighteen pounds, was located on the left side and was everywhere adherent, both to the abdominal walls and to portions of the intestines by recent lymph. The most noticeable thing about it was the fact that the tumor had been completely twisted upon its pedicle, and the entire growth external to the constricted neck of the cyst was gangrenous. The pedicle was sewed across with kangaroo tendon, and a sufficient amount of peritoneum was dissected from it to be intra-folded over the stump, and was secured by a continued Lem-

bent tendon suture. The peritoneal cavity was closed with a continuous suture of fine tendon, and the abdominal wound joined by a series of stitches which brought its margins into close relation from bottom to surface; the skin closed by a blind suture and iodoform collodion applied. This patient made a most excellent recovery, without a single untoward symptom.

The second case, that of Mrs. A., age fifty-six, had, up to the time of the operation upon the preceding case, been under the care of an advertising doctor in Boston who was undertaking the rather unique method of removing the tumor by emetics and purgatives. This treatment had rapidly exhausted her strength and she was fast travelling toward the grave. Encouraged by the brilliant success of the operation for the relief of her friend and neighbor, Mrs. H., she besought me to take her under my care and make such arrangement for her treatment as was deemed best. Upon visiting her I found her sitting propped up with pillows, short of breath, and the picture of distress. Her abdomen was immensely enlarged and her limbs enormously distended; pulse small and quick. Death would evidently soon come, unless relieved. I again invited Dr. Marcy to come to my aid. Upon opening the abdomen the cavity was found full of fluid, due to a large rent in the ovarian cyst. Adhesions were everywhere present and considerable hemorrhage resulted from their detachment. The pedicle was cut off as usual, overcovered with peritoneum, and sewed across with continuous kangaroo tendon. Hot water was freely poured into the abdominal cavity for the arrest of the hemorrhage. The peritoneum and abdominal walls were closed as in the preceding case with buried animal sutures. The lips of the wound were sealed with iodoform collodion and a bandage applied. As in the preceding case the patient's condition and comfort were immediately improved. From a condition of impending death she was placed in one of safety and mental tranquillity. The tumor removed from this patient, fluid and solid, weighed over forty pounds.

At the present writing, six weeks after operation, both these patients are doing well.

Medical Progress.

NOTES OF PROGRESS IN PHYSIOLOGY.

BY JOSEPH W. WARREN, M.D.

(Concluded from No. 7, page 170.)

The influence of various different alcohols on the heart was examined some time ago by Dr. Hemmeter.⁹ Blood containing small amounts of the alcohol under investigation (usually 0.2%) was sent through the heart, and the action on the work done by that organ was noted. The work done is measured as the quantity of blood pumped round in any given time, let us say thirty seconds. The heart is isolated by Martin's method, which was sufficiently described in a former report, and these experiments were done under Martin's supervision. As the animals (dogs) were approximately of the same size, the quantities of blood pumped round in a given time and the change in these under the action of the alcohols would seem to be

⁹J. C. Hemmeter: On the comparative physiological effects of certain members of the ethyl alcohol series (CH_3O to $\text{C}_5\text{H}_9\text{O}$) on the isolated mammalian heart. Studies from the Biological Laboratory of Johns Hopkins University, IV, 225.

fairly comparable. The conclusions reached are summarized as follows: (1) The physiological activity of the group (CH_3O to $\text{C}_5\text{H}_9\text{O}$) increases with the complexity of the molecule, with exception of the second member, namely, ethyl alcohol, which is weaker than methyl alcohol. (2) The physiological activity increases as the temperature increases.

The effect of the alcohols is also tabulated by the author according to the *average lessening* of the amount of blood pumped out during thirty seconds as follows:

1. Methyl alcohol (CH_3OH)	.	.	19.46 c. cm. decrease.
2. Ethyl " ($\text{C}_2\text{H}_5\text{OH}$)	.	17.45	"
3. Propyl " ($\text{C}_3\text{H}_7\text{OH}$)	.	79.70	"
4. Butyl " ($\text{C}_4\text{H}_9\text{OH}$)	.	161.12	"
5. Amyl " ($\text{C}_5\text{H}_{11}\text{OH}$)	.	322.32	"

The amount for the amyl alcohol is calculated from the observations made with weaker solutions or for a shorter time, it being impossible to keep the heart going with a 0.2% solution of this alcohol so as to measure the outflow for thirty seconds. The table shows a very remarkable uniformity of increase of the weakening action of the alcohol as the number of CH_3 increases. With the exception of the ethyl, or common alcohol, the effect of each is found to be twice as bad as that of its predecessor in the series. In fact, this uniformity is almost suspicious, and one objection may be fairly urged against it. It may be questioned, namely, whether it be proper to compare the mere amount of lessening of the outflow. This is apparently done on the assumption that the amount of blood sent out by the hearts of dogs of about the same size will be comparable, and therefore the diminution of this amount in each case may be compared with that of any other case. Unfortunately the figures published in the article we are considering do not justify this proceeding. In the few cases printed as typical ones the normal amounts, that is, those pumped at fairly normal temperatures, without alcohol, range from 135 to 197 c. cm. It follows, therefore, that lessening the amount by any number of cubic centimetres will have a different significance according to the size of the non-alcoholized outflow. As only about one-fifth of the successful experiments are published, it is impossible to say what the result would be if the percentages of change under the influence of the alcohols were tabulated. Some such method would seem to be much fairer than the one tabulated above. I have calculated the percentages for the five experiments given in detail. The percentage diminution of the alcohols in the order of the table already quoted is 11.4, 15.5, 47.2, 83.4, and 199.0% respectively. By a loss of 199% is meant that amyl alcohol causes a loss of 99.5% in 0.1% solution, and this is doubled to make it comparable with the other alcohols which were used in solutions twice as strong. The percentages are not as strikingly uniform as the figures in the author's table.

Hemmeter calls attention to the peculiar behavior of ethyl alcohol, which, according to his table, is the least deleterious of the series, and altogether fails to act on the heart as it should according to its position chemically. He is accordingly obliged to resort to the hypothesis that this alcohol is "probably constantly present in minute quantities in the atmosphere, as fermentation is going on in many ways and places, and as dogs probably must frequently get some little ethyl alcohol in their food" and that an organism may "es-

tabish a special degree of tolerance of one alcohol while retaining its sensitiveness to others." He also finds it necessary to use the alleged, but, by no means convincingly demonstrated, presence of alcohol as a normal constituent of the tissues to explain the feeble action. Other observers seem to have found that ethyl alcohol acts more feebly than methyl alcohol, or, at least, does not act twice as strongly as it would if the differences depended upon the number of CH_2 elements in its composition. Probably the relations of one CH_2 to another CH_2 , or to several of them is of more consequence than the mere number of them, and this view would permit the latter three alcohols of our series to have a much more vigorous action than the first two. In the meantime it would be interesting to have a revision of Dr. Hemmeter's figures in the manner suggested, for the percentage method does not put ethyl alcohol in quite so peculiar a position as he has given it.

OTHER CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HEART.

While there is commendable uniformity in explaining the cause of the second pair of the four heart sounds — or more exactly the second and third of the three sounds — the nature of the first sound still provokes discussion and invites experiment. The latest communication is by Haycraft,¹⁰ and presents considerations in favor of its valvular character, or at least of a definite valvular element. He admits that the contracting ventricle may produce a sound, but maintains that this sound is a resonance sound — and moreover a very complex one since it includes chest, stethoscope, and ear resonance tones. An examination of the pitch of the heart sounds seemed to show that they are higher than those produced by contracting skeletal muscles — or by the muscular tissue of the pulsating but bloodless heart itself. The pitch of the two heart sounds was determined for rabbits, a dog, and a boy by three persons with good musical ears. It was found that the heart sounds varied "somewhat in pitch even in the same species, but they are always in the bass clef and separated a minor third, or an impure minor third, from one another." Haycraft then proceeded to compare the pitch of the two heart tones in excised dead hearts where, of course, no muscular contractions occurred, but where closure of the valves could be produced by changes of pressure. He used the hearts of sheep and calves and sent a stream of saline solution in through the aorta to close its valves, and also into the right ventricle so as to close the corresponding auriculo-ventricular valves. The pitch of the aortic valves was found to be about a minor third higher. Haycraft concludes: "The first heart sound is then an impure musical note, a minor third below the second sound, and in the bass clef. It is a valvular sound like the second sound. It is accompanied by resonance tones both of the chest, stethoscope and the ear, these tones being produced by the shock of the contracting heart. In addition it is of course possible that there may be concomitant sounds produced by the rushing of the blood and other minor disturbances."

In a previous report attention was directed to Martin's study of the influence of temperature upon the rate of the mammalian heart beat. He demonstrated

that "between the limits of 27° C. and 41° C., the heart of the dog, when isolated from all other organs but the lungs, beats quicker the higher its temperature, so that by heating or cooling the blood supplied to the isolated organ through the superior vena cava, the pulse-rate could be controlled."

Later experiments of the same author¹¹ have led to interesting results concerning the temperature limits of the heart's vitality. The main difficulty in previous experiments had been that high and low temperatures enfeebled the heart beat to such an extent as to interfere with its nourishment through the coronary arteries. The method by which this obstacle was removed and the pressure kept sufficiently high to ensure good nutrition need not be given in detail here.

"The isolated heart of the cat may be cooled down to a temperature of 16.5° C. (as indicated by a thermometer introduced into the right heart) and yet not be killed, as it revives if soon warmed again, but it usually dies at about 17° or 18° C." The cooling is accompanied by a slowing of the pulse.

The action of high temperatures on the heart is distinctly more complex. When the temperature is slowly and gradually raised the lethal or maximum temperature is found to lie usually between 44.5° and 45° C. Before this is reached there is found to be an optimum temperature at which the beat is quickest, although this may not be the temperature for doing the most work. This optimum in thirteen experiments ranged from 40.6° to 43.3° with an average of 41.3° C., any higher temperature in each case slowing the rate. By care it is possible to adapt the heart to higher temperatures. If the blood be cooled somewhat as soon as the heart shows any signs of weakness the temperature may then oftentimes be raised again to a still higher point without causing any weakening of the beat; in this way we can raise not merely the maximum but also the optimum temperature. This is similar to the results noticed clinically in fevers, especially in those of a markedly remittent type.

The "Baltimore method" for isolating the mammalian heart has also been used to investigate the question of the blood flow into the heart during diastole.¹² There has been much speculation concerning the "active" character of this condition of the heart. Many have believed that the blood is drawn into the heart by its own action, but no satisfactory statement had been made in support of such a view, and various experiments had made it less probable. Martin's article contains a full description of his method of working, and his results may be stated in his own words: "Once the 'aspiration of the thorax' has been eliminated [by opening the chest with the use of artificial respiration], the right auricle of the mammalian heart will not receive blood unless supplied to it under a decided, if small, positive pressure, while the heart in the closed thoracic cavity may, and probably does, act as a suction-pump, this is not due directly to an active expanding force of the heart, but is the secondary result of the pneumonic conditions prevailing within the normal closed chest cavity. Any cause diminishing thoracic aspiration must, therefore, greatly hinder the work of the heart; and it is probably more in this

¹⁰ H. N. Martin and E. G. Applegarth: On the temperature limits of the vitality of the mammalian heart. Studies from the Biological Laboratory of Johns Hopkins University, IV, 275.

¹¹ H. N. Martin and F. Donaldson, Jr.: Experiments in regard to the supposed "suction pump" action of the mammalian heart. Studies from the Biological Laboratory of Johns Hopkins University, vol. IV, p. 31.

¹² Haycraft: The cause of the first sound of the heart. Journal of Physiology, XI, 488.

manner that the circulation is impeded in certain cases of hydro- or pneumo-thorax than by direct pressure exerted on the heart itself."

What seems to be an important addition to our knowledge of the chemistry of the blood has been made by Gabritschewsky,¹³ of Moscow. Glycogen is well known to be a normal constituent of the liver and muscles, and has been commonly considered to be stored up in these organs as a sort of reserve material. The transportation of this substance from the liver to other organs is more or less mysterious because the proof of glycogen in the circulating blood has been very incomplete. Very few observers have found it in this tissue, and even these have hesitated to maintain that its presence should be considered normal.

Gabritschewsky finds that a certain small number of leucocytes normally contain glycogen. This intracellular glycogen is not much increased in man by taking food although it may be in animals. There is a marked increase in some diseases (*leukemia* and *diabetes mellitus*). Besides this intracellular glycogen there is also found free intracellular glycogen in granules or in fragments of leucocytes (Blutplättchen?). This intracellular glycogen is normal but is markedly increased in certain pathological conditions.

As already indicated the amount of such glycogen in the blood is not particularly altered by experimental feeding with carbohydrates or peptones. On the other hand, the introduction of sugar directly into the circulation or into the peritoneal cavity leads to a great increase of glycogen in the blood, and this seems also to occur when starch is injected into the peritoneal cavity. The same result is reached (guinea-pigs and dogs) when a peptone solution is put into the peritoneal cavity or into the blood. The inference appears reasonable that the leucocytes can, and do, form glycogen from carbohydrates and from peptones. The subject requires much more examination.

Some additions to our knowledge of the curdling of the blood will be mentioned in another portion of these notes below.

GASTRIC ACTIVITY OF INFANTS.

A long series of examinations of the digestive process in infants¹⁴ gave interesting results, 248 healthy foundlings thus making a slight return for the services of the State in preserving them alive. The stomachs were emptied and washed out with distilled water (35° C.) by using soft catheters (No. 8 to 10, Jaques) in the ordinary manner at intervals of ten to fifteen minutes after feeding. The ages of the babies ran from two to forty-one days. The following points are noted:

(1) After a meal of 60 to 80 grammes of milk, the stomach may be readily pumped out for one and one-half hours, but the quantity diminishes rapidly during the first hour. At the end of two hours only 20 to 30 c. cm. may be obtained, and this disappears slowly in the course of half an hour.

(2) The acidity of the infant stomach is much less than that of the adult stomach. This was tested by neutralizing with one-tenth normal soda solution using phenolphthalein as an indicator. The average results showed an increase from 0.03–0.058% [that is, 0.3 to

¹³ Gabritschewsky: Mikroskopische Untersuchungen über Glykogen im Blut. Arch. f. exp. Path. u. Pharm., xxviii, 272.

¹⁴ M. van Puteren: Untersuchungen über Physiologie der Magenverdauung des Säuglings. Dissertation, St. Petersburg, 1889. Gräbner's résumé in Jahrb. f. Kinderheilkunde, xxxi, 1890, 186.

0.9 parts in one thousand] for digestive periods of ten to ninety minutes, after which no increase of acidity was apparent. The lowest acidity observed was 0.022% while the highest, 0.121%, was only a half or a third of the amount considered normal in the adult. The determination of the character of the acid met with some difficulties since many of the more usual color reactions are uncertain in digesting mixtures of such feeble acidity. By the use of exacter methods (Riche, Rabuteau) Van Puteren convinced himself that hydrochloric acid is the normal acid in the infant stomach during the first two months, lactic acid being only exceptionally present.

(3) The antifermentative action of the gastric juice seemed to be exceedingly feeble. Plate cultures made at successive periods of the digestion showed no marked difference in the number of colonies. The conclusion is that the gastric juice of the infant is not very efficient as a germ destroyer, and the infantile digestive organs are therefore particularly prone to disturbances which, however, may be for the most part prevented by the use of sterilized milk.

(4) The milk-curdling ferment (which Foster now calls "rennin") was always absent in children up to twenty-four days, and could only be definitely demonstrated at thirty to forty days of age.

Van Puteren's results as to the peptonization process itself do not seem (judging from the abstract) sufficiently exact to be very interesting. Albumin (by which is presumably meant a substance coagulable by heat) has generally disappeared by the end of the first hour, and "pepton" is constantly present twenty-five minutes after feeding and until the end of the digestive process. Sugar was always found, and fat, too, so long as pepton was still present.

Free fatty acids (as the result of a fat splitting ferment or of the similar action of the pepsinhydrochloric acid) could not be found.

Gräbner notes that some of these results differ markedly from those obtained by Leo¹⁵ a couple of years ago. Leo found that gastric digestion ended in one and one-half hours in the first mouths of life, but as he did not wash out the stomachs as Van Puteren did, small quantities of material might escape attention. Leo agrees that the acidity is in general much less than in the adult, but gives no definite figures and usually finds lactic acid in the later periods of the digestive process. Leo also found the milk-curdling ferment always, even in the stomachs of the new-born, and his estimate of the antifermentative powers of the sucking's stomach is much higher than that of Van Puteren. It is not always clear how these discrepancies are to be explained.

THE CURDLING OF MILK AND BLOOD.

Some additional light seems to be thrown upon the coagulation processes in milk and blood by the work of Arthus and Pages.¹⁶ These authors point out that we must carefully distinguish three different things in the behavior of casein: precipitation, as by an acid (since it may be dissolved again by alkalies); coagulation, by heat in the presence of an acid; and finally, "casification." The action of the "labferment"

¹⁵ H. Leo: Über den Prozess des normalen u. krankhaften Magen u. d. therapeutischen Erfolge der Magenausplättung im Säuglingsalter. Berl. klin. Wochenschr., 1888.

¹⁶ Arthus and Pages: (1) Recherches sur l'action du lait et la coagulation du lait dans l'estomac et ailleurs—Archives de physiologie, xxii, 331; (2) Sur le labferment de la digestion du lait—ibid., 356;

(3) Nouvelle théorie chimique de la coagulation du sang—ibid., 739.

(rennet)¹⁷ is declared to be that of preparing the casein for curdling and not the curdling itself. The "caseification" has then two steps: (1) a transformation of the casein by splitting it into at least two substances, "hémicaséinalbumose" (the albuminous substance of milk serum) and "caséogene," the forerunner of caseum¹⁸; (2) the combination of "caséogene" with salts of alkaline earths to form various compounds of which the type is the ordinary "caséum." This process takes place in the stomach as well as in the test-tube. The function of the "curdling ferment" is, therefore, according to this view, digestive, and to be classed with that of pepsine and trypsin. The real curdling depends upon the salts of calcium (particularly the phosphate of calcium).

These results led to the study of the coagulation of the blood and to the demonstration of its dependence upon calcium salts. The conclusions may be given nearly in the words of the original.

(1) The coagulation of the blood may be absolutely prevented by the addition of oxalates, fluorides, or soaps. Blood to which the oxalate of potash is added as to make a 0.1% solution [that is, 1.0 oxalate to 1000 blood] will not clot even when putrefaction comes on. The oxalate may be added as a solid, or more conveniently, in solution, but any less proportion than 0.1% will merely delay the coagulation. The oxalate of sodium or ammonium or the fluorides of the alkalies may be used, or even soap solutions.

(2) As this procedure may arrest an impending coagulation or one already begun, it is inferred that the salts do not prevent the formation of the ferment.

(3) This action is due to a decalcification. "Oxalated" blood which is permanently incoagulable will coagulate readily when the calcium salts are replaced, the clot forming in six to eight minutes upon the addition of a 1.0% solution of calcium chloride in the proportion of one-tenth of the volume of the oxalated blood. The action of the oxalates does not resemble that of neutral salts, for no mere dilution will clot oxalated blood as it does salted blood. In other words, the presence of soluble calcium compounds is essential to coagulation, and anything that removes them hinders the coagulation. The calcium salts may be replaced by those of strontium but not by salts of barium or magnesium.

(4) Fibrin is a calcium compound. The amount of fibrin obtained by adding the calcium salts to oxalated blood is sensibly proportional to the amount of the salts in solution.

(5) It is not a transformation of the fibrinogen into a substance capable of uniting with calcium salts to form an insoluble compound, for the coagulation is not instantaneous. The ordinary fibrinogen of the pure or of the salted plasma may be obtained by applying common methods to the decalcified blood.

In this connection it is worth while to note the results reached by Söldner after examining the relation of the salts to the casein:

Söldner starts from the observation that the basis of

the ash of milk cannot be neutralized by the acids present as the amphoteric reaction of the milk requires. He shows that 25% of the phosphoric acid comes from the phosphorus of the casein (or its nuclein), and is preformed in the milk. Casein behaves like an acid inasmuch as it may form salt-like combinations with alkalies, two of which Söldner was able to distinguish as neutral or basic calcium compounds (with 1.55 and 2.36% CaO respectively).¹⁹ The neutral compound is probably present in the milk.

The existence of various organic acids in the milk is also very probable. Henckel has recently obtained one gramme citric acid from a litre.

Only 52% of the calcium oxide in combination with acids appears in the filtrate obtained with porcelain under pressure. The rest, then, appears to be suspended in the milk as insoluble di- or tri-calcium phosphate. The calcium salts play an important part in boiling and in the curdling process. Heated milk shows a more marked increase in alkaline reaction which loses itself on cooling, but all feebly alkaline liquids do the same. It is not true that boiled milk cannot be curdled with rennet. The process is much slower because a portion of the essential calcium salts has been changed by heat to insoluble tricalcium phosphate. The addition of alkali has a similar action. Introducing CO₂ or any acid to make the phosphate soluble brings back the curdability. In the same sense the addition of calcic chloride hastens the curdling.

Reports of Societies.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON GENERAL MEDICINE.

STATED Meeting, February 16, 1892, A. A. SMITH, M.D., Chairman.

DR. W. W. VALZAH read a paper on

THE CAUSATION AND TREATMENT OF CHRONIC DIARRHEA.

Diarrhea, he said, whether conservative or not, was always exhausting, if maintained for any considerable time. It should always be the aim of the physician to try to find out the cause of the trouble; although it was not always possible to connect chronic diarrhea with a distinct lesion of the intestinal tract, nor were its relations to functional disturbances as yet fully determined.

The most marked characteristic of the stools was their fluidity; but they were also altered in chemical composition and other qualities. It was important to make a careful study of the stools, and it was to be borne in mind that these generally varied from day to day, and often in accordance with the character of the food taken. In many cases more or less undigested food would be found in them. Chronic diarrhea being for the most part a conservative process, except in the rare variety which was purely nervous, was not infrequently found in connection with advanced organic disease of the heart, lungs, kidneys and other organs. From a therapeutic view it was very important to get at the starting-point of the trouble. Commonly in the class of cases most frequently met with, there were

¹⁷ Apparently on account of the change in the view taken of its action, the term "laborient" is retained in these articles, although Paget had proposed the name "peixine" in his thesis [Keicherthes sur la peixine, 1885]. Peixine would be an admirable name for a curdling ferment, and one which might be used to form hemopeixine (or hemopeixine), or the fibrinogen of the pure plasma, but I have been told by Professor Goodwin, who kindly sent me his thesis, that he had been remonstrating with me that Aristotle used οὐράνιον in connection with the coagulation of milk and blood. I suggested the use of the word to Professor Foster, in ignorance of Paget's thesis, but "rennin" had unfortunately already been adopted.

¹⁸ Söldner: Die Salze der Milch u. ihre Beziehung zu dem Verhalten des Caseins. Dissertation, Erlangen. Noted from Escherich's Summary in Jahrbuch f. Kinderkr., xxxi, 173.

some defects in the three great processes of secretion, elimination, and metabolism, and an important connecting link was auto-infection. The quantity of toxines might be abnormally increased. Some of the toxines contracted, others dilated the blood-vessels; and some paralysed, while others stimulated, the nerves. The prevention and treatment of auto-infection constituted the most important element in the successful management of chronic diarrhoea.

All cases might be roughly divided into two great classes: those in which lesions of the intestines are present, and those in which they are not. In the cases where there was only functional trouble the disease was mild and more or less intermittent, and no evidences of inflammatory action were found in the stools; while chronic enteritis was characterized by more or less constitutional disturbance and by tenderness on pressure at certain points with the appearance of blood, mucus and pus in the stools, if ulceration was present. The lower down the intestinal lesion, the more frequent and painful would be the movements. If bile matters were found in the stools, it pointed to the small intestine as the seat of trouble.

Treatment.—The treatment, in order to be successful, required the most indefatigable perseverance on the part of the physician, and the most hearty co-operation on the part of the patient. The most minute directions were to be given and carefully followed, and, above all, it was requisite that the medical attendant should infuse hope and courage into his patient. Among the essentials were good hygienic surroundings, a carefully regulated life, and proper diet. The most detailed instructions as to clothing, bathing, rest and exercise should be given. Warm clothing was required, and especially over the abdomen. In the beginning a warm plunge or sponge bath was of great service in causing increased elimination of toxine. Absolute rest in bed was necessary in some cases for a considerable time. Later, in the stage of convalescence, moderate exercise was beneficial.

The treatment was to be based on the etiology, and had very little to do with the control of the symptoms by opiates and astringents. Checking a diarrhoea by drugs was only temporizing, and it commonly ended in producing an explosion in the system. Active elimination by all the emunctories was usually called for, and "free drainage" was as important as in surgery. In addition, it was important to improve the condition of the blood in every way possible. In general, therefore, careful alimentation and active elimination were the prime requisites.

In particular, the first thing to do was to cleanse the alimentary canal and keep it clean and sweet. Cholagogues and purgatives were called for, and among the agents to be used were bichloride and biniodide of mercury, calomel, and salicin. Cascara sagrada was the most valuable laxative at our command, and in general those drugs were to be selected which least overtaxed the diseased part. In some cases stomach-washing, not too frequently repeated, and in others copious draughts of hot-water were of great service. The latter had a good effect upon the liver and also counteracted fermentation in the intestine. If there was much mucus the addition of an alkali to the water was called for. Mérck's salicin was the only salicin that he had found to be active, and it was often useful in ten or twenty grain doses. Salol was by far the most efficient duodenal disinfectant. When the large

intestine was at fault bismuth was of service, if given in sufficiently large doses. To assist the stomach dilute hydrochloric acid was sometimes required. It was to be given two or three times within two hours after eating in doses of from five to ten drops.

A diet of animal food was often of the greatest possible service, especially as it was important in many cases that digestion should take place principally in the stomach, in order that the diseased intestine might be given a physiological rest. Milk was not suitable in disorders of the small intestine, and in general, on account of the difficulty of getting it pure and fresh and the rapid changes which it was apt to undergo, it was not as desirable an article of diet as meat. If the trouble were located in the colon or low down in the ileum, however, a milk diet was often advisable. The treatment might be summed up as follows: Prevent auto-infection; cleanse the alimentary canal; secure perfect digestion of the food taken; treat the lesions; treat the sequelæ; control harmful symptoms.

DR. ANDREW H. SMITH called attention to malaria as a cause of chronic diarrhoea. The diarrhoea might possibly be the only evidence of the malarial poison in the system, and would soon disappear after the institution of anti-periodic treatment. He agreed with Dr. Van Valzah that a large number of cases of chronic diarrhoea did much better on an animal than on a farinaceous diet, and that the reason for this was that rest was secured for the intestines by throwing the work of digestion on the stomach. In some cases we had a diarrhoea which was due to imperfect action of the pancreas, and in these the administration of ether appeared to be indicated.

DR. C. E. QUIMBY said that it had taken him a long time to get out of the old way in which he had been brought up of treating these cases with opiates and astringents. He now believed, however, that it was just as necessary to clean out the intestinal canal in chronic diarrhoea as it was in acute diarrhoea due to any source of irritation, like green apples, for instance; and he invariably began his treatment with a cathartic. In the diarrhoea of tuberculosis he believed that it was very important for the relief of the pain so frequently complained of, as well as the looseness of the bowels, that the food should be digested before it reached the diseased glands in the intestine. He had, therefore, adopted the practice of giving large doses of pancreaticin an hour or an hour and a half after eating, and had found it attended with very good results.

DR. V. AGRAMONTE spoke of the liability of milk to undergo putrid fermentation, which often set in long before there was any evidence of lactic fermentation, and said that in warm weather especially, if milk was called for, he thought it was better to use condensed milk, which was not open to the same objection. He also spoke of haemorrhoids as a cause of chronic diarrhoea which ought not to be overlooked.

DISCUSSION ON OPIUM-POISONING, ESPECIALLY FROM THE MEDICO-LEGAL SIDE.

The discussion was opened by DR. ANDREW H. SMITH, who said at the outset that the symptoms were sometimes insufficient for a positive diagnosis. Having mentioned that when larger doses of opium were taken the stage of excitement was usually very brief, he gave a short summary of the ordinary signs of opium narcotism. In speaking of the contraction of the pupils, he said that while this was, as a rule,

perfectly symmetrical, one case was mentioned by Wood in which the pupil of one eye was contracted, while the other was dilated. He believed that too much stress should not be laid upon the contraction of the pupils. Before death the pupils generally became dilated. Then, too, it was well to remember that the atropia now so frequently associated with morphia in hypodermic injections, tended to produce dilation.

The condition of the respiration, he went on to say, was generally regarded as the most certain indication of the effect of opium on the system. While, however, it was undoubtedly true that the slowness of the respiration was, as a rule, an index of the extent of the narcotism, cases ending in death were on record in which the respirations were but little, if any, slower than normal. He then mentioned two such cases, one occurring at St. Luke's Hospital, and the other at Bellevue. On the other hand, he had seen one instance in which one-eighth of a grain of sulphate of morphia reduced the respirations to thirteen per minute.

In speaking of the differential diagnosis he said that the pupils were very rarely equally dilated and that there was apt to be strong pulsation of the carotids. In apoplexy it was not possible to rouse the patient, though reflex movements could be excited; while in opium-poisoning the patient could often be temporarily roused, but reflex movements could not be produced. In apoplexy there were often movements of the arm or the leg on one side (the other side being paralyzed), and this was not the case in opium-poisoning. The symptoms of apoplectic effusion into the pons Varoli were said to be identical with those of opium-poisoning, but it seemed to him difficult to conceive of a lesion situated so exactly in the median line as to produce precisely similar effects on both sides of the body. In compression of the brain there was usually some evidence of external violence. A patient suffering from alcoholism was apt to babble incoherently, which was not the case in opium-poisoning, and the cold douche was usually effective in dissipating to a marked extent, the symptoms of alcoholic intoxication. In many cases of opium-poisoning, the odor of the drug could be detected in the breath and in matters vomited.

In uræmic coma the presence of albumen and casts in the urine would usually establish the true nature of the case. To what extent renal inadequacy might intensify the action of opium was a question of interest. In a case where albumen was found to be present in the urine he had known a dose of McMunn's elixir equal to one-sixth of a grain of sulphate of morphia to produce death in twenty-two hours, notwithstanding the most energetic treatment to save the patient. In another case which he had seen, an ordinary dose of morphia given after a surgical operation was followed by death, and at the autopsy granular kidney was found. In speaking of the matter of idiosyncrasy, he referred again to the case previously mentioned, in which one-eighth of a grain of morphia reduced the respirations to thirteen to the minute, and mentioned another in which a small quantity of morphia absorbed through the skin produced profound narcotism, the respirations falling to the extreme point of five in three minutes. The post-mortem appearances after opium-poisoning were for the most part negative, and would throw but little light unless the presence of the poison could be shown by chemical tests.

DR. VAN VALZAH mentioned a case of tobacco-poisoning he had seen, in which the pupils were contracted in precisely the same manner as by opium.

DR. P. BRYNBERG PORTER spoke of a case of diabetes where a small dose of morphia given hypodermically for the relief of pain had apparently been the exciting cause of fatal coma which was no doubt already impending.

The Chairman related some cases which had occurred in his experience. One was that of a patient whose respirations became reduced to two per minute, but which, like the remarkable case mentioned by Dr. Smith, recovered. Another was that of a man suffering from rheumatic gout who died, notwithstanding the most energetic treatment, from the effects of a dose of one-sixth of a grain of morphia given for the relief of pain. The autopsy revealed a cirrhotic kidney. A third patient whom he had seen when an inmate of Bellevue Hospital, some twenty years ago, died with all the evidences of opium-poisoning, and at the autopsy a clot was found in the pons, situated directly in the centre, and nearly half an inch in length. It was the only case of the kind that he had ever met with, and he regretted that he had not preserved the notes of it. He remembered, however, that the respiration was of a stertorous character. In conclusion, he called attention to two points. The first was, that in doubtful cases it was highly desirable that the urine should be examined for the presence of opium, as it afforded a valuable aid to diagnosis. The second was in regard to contraction of the pupils. He had seen this present in cases of alcoholism when there was pachymeningitis on both sides and extending pretty well forward.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Thirty-first Annual Meeting, January 9, 1892.

DR. T. M. ROTCH reported

CASES OF ATROPINE AND OPIUM POISONING IN EARLY LIFE.¹

DR. S. E. WYMAN said: I have but little to add to Dr. Rotch's interesting account of the case just reported, except to state what part was taken by me after Dr. Rotch was called away.

Certainly, when first seen by me, at 10 a. m., she was in a pitiable state; being dragged about the piazza between two attendants, one of whom supported her on either side; her head was hanging on one side, her eyes closed, and her legs dangling in her forced journey. When taken into the lap of the nurse brought by Dr. Rotch, her head fell immediately upon the nurse's shoulder, and she fell fast asleep, requiring constant efforts to keep her awake. In an interval of consciousness, she begged to be allowed to go to bed. Her pupils were contracted to an almost pin-hole size; her pulse rapid; her respirations not noteworthy; her skin pallid and cool.

She vomited several times after 10 a. m., coffee and water containing the belladonna mixed by Dr. Rotch. At 10.20 she was put into a mustard pack, vomiting at the smell of the mustard. At 10.30, I injected subcutaneously atropine sulphat., gr. $\frac{1}{10}$. It was truly remarkable to see the effect which followed this

¹ See page 231 of the Journal.

within forty-five minutes. Whereas, previously, it was necessary to speak to her every thirty to forty seconds to prevent her from sleeping, she then began to sit up and notice people, who were standing on the street before the window where she was held by the nurse. She did not, however, remain awake voluntarily for any length of time so that I repeated the same injection at 11.20 A. M.

At 12.10 P. M., she was much improved, sat up, asked to be dressed (as she had been previously in a blanket) directed what gown she preferred, etc. The effects of the atropia were marked in the efflorescence of the skin, the dryness of the mouth and dilatation of the pupils. When dressed, she desired to walk out on the piazza, and did so.

I stayed with her until 1.30 P. M., when she was quietly resting on the sofa, but perfectly conscious and wakeful although weary.

The cases which occurred in my own practice were in very young infants, and, in two instances, interesting from the fact that the source of the poisoning was a famous patent cough-balsam sold and advertised extensively.

CASE I. Florence C., aged twenty-three days, had been coughing for several days, and had been treated by her mother. I was hurriedly summoned at 3 P. M. on November 11, 1891, with the message that the baby was dying and could not be aroused by anything which the mother could do. I saw her at 3.15 P. M., when I found the infant plainly under the extreme effects of opium. She was cyanotic, cold, almost pulseless, and drawing a feeble breath only at long intervals. The pupils were mere pin-holes, the thumbs clinched tightly in the palms of the hands.

I learned from the mother that, as the child had a bad cough, she had given her, at 8 A. M., just after nursing, some Adamson's Cough Balsam, just how much, it was difficult to learn, but probably between five and ten drops; that the child went to sleep soon after, and the mother thought nothing of it until 2 P. M., when she tried to arouse her without success. After working some time, she sent for medical help.

At 3.20 P. M. she was put into a hot mustard pack. Her color improved some, but otherwise her condition remained the same. There was delay in getting the solution of atropia, so that it was 3.40 before I gave her gr. $\frac{1}{15}$ by subcutaneous injection; and this was repeated at 4 P. M. She began to improve, the pupils dilating and the skin becoming bright scarlet. It was not until 9 P. M. that she was sufficiently awake to the nurse. From this time on her recovery was rapid.

In the same room was a child two years and ten months old, who had been similarly treated with Adamson's Balsam, who was so drowsy that he could keep his eyes open for a few seconds at a time only. He was, however, so much less under the influence of the opium that no treatment was given him.

CASE II. Frances W., aged five weeks. I was called to see her November 21st at 7.30 P. M., the message being that "the child could not be roused, and was dying." This infant had been seen by me some days previously, and a prescription of liquor ammon. acetatis, syrup ipecac, syrup tolu and water ordered.

When seen she was very much in the same condition as the first case. The skin was purple and cold; the pupils contracted to the extreme degree; almost no efforts at respiration; and at each attempt the noise

of mucus in the throat; scarcely any pulse to be detected at the wrist; and the thumbs tightly clinched in the palms of the hands. She was plainly under the marked influence of opium, and apparently about to die.

At a loss to know where any opium could have been obtained, I learned that the mother might have given the child by mistake half a teaspoonful of a prescription, written by me in March, 1889, for a child seven years old, which contained, as I learned afterwards from the druggist, tr. ipecac Co., twenty drops to two fluids ounces.

I gave the child some hot whiskey and water, put her into a hot mustard pack, and at 7.45 P. M. gave, by subcutaneous injection, atropin sulph., gr. $\frac{1}{15}$; and at 8 P. M., atropin sulph., gr. $\frac{1}{15}$, by subcutaneous injection. She began to improve, so that at 8.30 P. M., by slapping, she was made to cry, but would lapse off to sleep if left alone. She began to breathe better, and coughed some. The pupils dilated, and the skin became red but not scarlet. The thumbs, however, remained in the same position, and there was a lateral deviation of both eyes, now to the right and again to the left, as late as 9.30 P. M.

Her recovery after this was uneventful.

DR. A. D. SINCLAIR had seen no cases in children, but remembered very well one marked case in an adult, of atropia poisoning, caused by a large dose given subcutaneously in the days when subcutaneous syringes were first heard of. Having no electric battery at hand, he had restored to the use of a cold douche, with good results.

DR. J. G. BLAKE said we all know that infants and rabbits will take large doses of belladonna with very little physiological effect. Among adults, too, there is a great difference in the susceptibility to this poison. Some years ago he was called to see a young man who was suddenly taken violently ill with all the symptoms of belladonna poisoning, including the rash, and dry throat. Vanilla ice-cream was found to be the cause. He was told by Dr. B. F. Davenport that a spurious bean sometimes used in making vanilla extract produced symptoms of belladonna poisoning. His patient recovered.

DR. E. J. FORSTER said he had given, in a severe case of opium-poisoning, one-half a grain of atropia, followed in fifteen minutes by one-quarter of a grain more, with recovery. Stillé says that one-quarter of a grain of atropia has caused alarming symptoms, but that less than one grain has never been fatal.

DR. R. L. HODGDON had also injected half a grain of atropia in opium-poisoning, with ultimate recovery.

DR. T. M. KOTCH said that the cases reported to-night teach us that it is our duty to warn people not to keep medicines too long, as they evaporate and become much stronger.

DR. S. E. WYMAN referred to a case where suppositories had been used, presumably containing opium, where the infant was made very drowsy.

DR. C. W. TOWNSEND said he had once written for six suppositories containing a small dose of both atropia and morphia, one to be given to a child each night for incontinence of urine. The apothecary had put the whole quantity into one suppository, and the child received a dose of each drug six times as large as was intended. Either one of the drugs alone might have produced serious results, but the two antagonized each other; and the result was simply drowsiness the next morning, and also a cure of the incontinence. The

apothecary admitted that the error was his, and that the prescription was properly written.

DR. EDWARD REYNOLDS gave a *résumé* of the paper read by him last time, entitled
CASES OF LABOR COMPLICATED BY PROLAPSED OVARIAN TUMORS,²

the discussion of which was deferred to this meeting.

DR. F. B. HARRINGTON said he thought there would be no objection to tapping the cyst if one was sure of his diagnosis. He should be tempted to insert a fine needle first for diagnostic purposes.

DR. G. HAVEN said that the case at the Lying-in Hospital was interesting from the point of view of diagnosis. It does not seem possible that an ovarian tumor could disappear in such a short time.

DR. W. L. RICHARDSON had not seen a case of this sort, but he would not object to puncturing the cyst with trochar, in order that delivery might take place.

DR. EDWARD REYNOLDS replied that he should fear peritonitis from the escape of a harmful fluid into the peritoneal space between the tumor and the vagina. He thought that it might be forced out around the trochar; and at all events some of the residual fluid would be pressed out after the removal of the trochar. The puncture in the vagina he should consider dangerous in the presence of the lochial discharge. The puncture of large pus-tubes would certainly be serious or fatal.

DR. A. WORCESTER said he had had no experience in these cases; but it seemed to him that the only thing to be done would be to tap, thus removing the obstruction, and if need be do an immediate laparotomy after the delivery. Laparotomy before delivery he believed would be almost impossible.

DR. G. HAVEN would agree with Dr. Worcester.

DR. F. B. HARRINGTON said the existence of prolapsed pus-tubes as a bar to delivery would probably never occur, as their existence would also be a bar to conception. And therefore he did not believe that laparotomy, to prevent peritonitis after tapping, would be necessary.

DR. E. REYNOLDS remarked that he was glad to hear the various opinions of the Society, having introduced the remarks on treatment for that purpose.

DR. F. H. DAVENPORT said that it would certainly be very rare that a non-adherent ovarian cyst should come down in advance of the head. A dermoid cyst or a fibroid tumor might do so, or a cyst bound down with adhesions. If these were present tapping could do no harm. The chocolate-brown contents of some cysts, or the contents of dermoid cysts are not septic and would do no harm.

DR. WYMAN referred to a case where there was a large cyst of the vaginal wall interfering with the examination of the os in labor. He tapped, and drew off several ounces of fluid.

DR. DAVENPORT had seen cysts within close proximity of the cervix on the anterior vaginal wall.

DR. J. G. BLAKE should certainly tap, if one of these cases should occur in his practice.

In reply to a question in the House of Lords the Prime Minister has declined to assent to issue a Royal Commission to inquire into the London fogs, but has intimated his willingness to support the appointment of a Committee of the House.

² See page 133 of the Journal.

Recent Literature.

Treatise on Gynecology, Medical and Surgical. By S. POZZI, M.D. Translated from the French edition under the supervision of, and with additions by BROOKS H. WELLS, M.D. Vol. I. New York: William Wood & Co. 1891.

Dr. Wells deserves the hearty thanks of the profession for giving us this valuable work in English, and is to be congratulated on the admirable manner in which the translation has been made. Pozzi's work is the latest comprehensive exponent of the French school of gynecology, and it demonstrates the fact that in that country the leading workers in this department are fully abreast of the times. We have here a book of which no country need be ashamed. In comprehensiveness of treatment, in catholicity of opinion, and in clearness of expression, it ranks with the best works on the subject.

It would be a pleasure to review it in detail, but it would be impossible to do justice to it in a short article. The order in which the subjects are treated suggests that clinical lectures formed the basis of the book, and the author says that such is the fact. Anatomy is left out, and wisely, as it seems to us. The first four chapters deal with antisepsis (a very thorough and valuable *résumé* of the subject) anesthesia, wound closure and control of hemorrhage and gynaecological examinations, all subjects of general interest. Then follow three chapters on metritis, which cover more ground than is usual under that title, since they include endometritis, endocervicitis, affections of the cervix, erosions and lacerations, as well as metritis proper. A most exhaustive treatment of the subject of fibroma of the uterus, occupies six chapters, and the various forms of medical and surgical methods employed for their relief are very fully described. More than the usual space is given to methods of vaginal enucleation. The following three chapters deal with carcinoma of the uterus, followed by four on displacement of the uterus, one on deformities of the cervix, and one on disorders of menstruation. In all, we have a book of nearly six hundred pages, which is issued in a very attractive form by the publishers. The notes by the translator add distinctly to its value, and not the least useful feature is the bibliographical notes which have been grouped together at the end of the various chapters.

A large number of engravings and six colored plates add to the attractiveness of the book. Taking it all in all it is one of the best books we have seen for a long time and no specialist can afford to be without it.

The Physical Diagnosis of the Diseases of the Heart and Lungs, and Thoracic Aneurism. By D. M. CAMMANN, B.A., Oxon., M.D. New York and London: G. P. Putnam's Sons. 1891.

The present book is one of a number which have recently been published on the subject of auscultation and percussion, and though well written, contains nothing to especially distinguish it above the others. The author is to be commended for introducing a short chapter on acoustics, but we doubt if American physicians will unreservedly agree that "the pleura is the frequent if not the only seat of crepitant and subcrepitant râles, as well as a sharer with the bronchi in the production of coarse and gurgling râles."

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SPECIFIC GRAVITY OF THE BLOOD.

THE specific gravity of the blood has recently been studied again by Peiper,¹ using the method of Schmaltz,² by which a small quantity of blood is weighed in a "capillary pyknometer." This method proved satisfactory, giving exact results from which the following conclusions were derived:

(1) The specific gravity of the blood of healthy human beings varies but slightly—1045 to 1046—with an average which is somewhat higher for men (1055) than for women (1053) or children (boys, 1052, girls, 1050). Landois has given 1055 as an average with a range from 1045 to 1075, while Jones, using a method like that of Roy, noted a range from 1035 to 1068.

(2) Pathologically, the variations may be relatively considerable (1025 to 1068). The specific gravity is lowered in nephritis, chlorosis and anæmia, as well as in diseases producing marasmus (for example, *phthisis pulmonum* and *carcinoma ventriculi*), but raised in febrile diseases and in conditions leading to marked cyanosis.

Schmaltz³ has also published some results obtained by his methods which may be given here nearly in his own words. Normally, the specific gravity of human blood varies within narrow limits, but is, as a rule, considerably lowered in anæmic conditions, most of all in chlorosis and in blood diseases properly so called. The specific gravity seems to depend chiefly upon the amount of haemoglobin, and to have only a very limited dependence upon the number of red corpuscles. As anæmic conditions improve the specific gravity of the blood is raised and may apparently serve as a good criterion of the stages of the disease. If the circulation in the extremities becomes sluggish the specific gravity of the blood is not infrequently raised, and

may be found to be normal despite existing anæmia (as in heart and lung troubles).

In Roy's⁴ method for examining the specific gravity of the blood, drops are brought into standard mixtures of glycerine and water until one is found in which the blood just floats, neither sinking nor rising. Jones⁵ modified this procedure slightly and found the method very convenient in a long series of observations.

Quite lately Jones⁶ has published a long article concerning his investigations, and some conclusions which he considers that they permit, despite an acknowledged incompleteness. The method is still substantially that of Roy, the standard solutions being mixtures of glycerine and water with the addition of sodium silico-fluoride, which Jones considers an efficient antiseptic in neutral or slightly acid solutions. The solutions are prepared with great care, using very accurate hydrometers and keeping "all the apparatus at exactly 60° F.," but it is maintained that the ordinary variations of temperature have no effect upon the measurements since the small column of blood in the fine pipette rapidly assumes the temperature of the liquid in which it is placed. A large number of such solutions are kept on hand for specific gravities ranging from 1027 to 1075. With a sufficient number it is asserted that results may be reached which are accurate to within "one-third of a degree," and Jones considers the limit of possible error in his own observations to be "not more than half a degree." The method has the advantage of great rapidity, but the details should be studied in the original.

It is difficult to condense the results which Jones presents, and still more difficult to be certain that they are all correct. Tables are given in chart form detailing the observations on 495 males and 662 females, all in good health. These charts show unquestionably that the range of the specific gravity of the blood is very great in the first year for both sexes, and then seems to lessen for several years becoming great again in women of thirteen to twenty-five years (a normal inclination to anæmia), and broadening out once more for both sexes in old age. Jones's summary of the points shown in the chart is as follows (page 344): "The specific gravity is generally lower in women than in men, but it is about the same in both sexes before the fifteenth year: and is higher in old women than in old men. In males, the specific gravity is about 1068 at birth—falls during the first year and subsequent two years, being about 1050 in the third year: thence it rises till about seventeen years of age, when it is about 1058. It remains as high during middle life, and falls slightly in old age. In females, the specific gravity is about 1066 at birth: it falls in infancy, as it does in males, to about 1049 in the third year. Thence it rises till the fourteenth year, when it

¹ Peiper: Das spezifische Gewicht des menschlichen Blutes. *Ctbl. f. klin. Med.*, 1891, 217.

² Deutsches Arch. f. klin. Med., xvi, 145.

³ Schmaltz: Das Verhalten des spezifischen Gewichtes des Blutes bei Kranken. *Deutsche med. Wehnschr.*, 1891, 555.

⁴ Proceedings of Physiological Society, 1884. *Journal of Physiology*, v, p. 9.

⁵ E. Lloyd Jones: On the variations of the specific gravity of the blood in health. *Journal of Physiology*, viii, 1.

⁶ E. Lloyd Jones: Further observations on the specific gravity of the blood in health and disease. *Journal of Physiology*, 1891, xii, 259.

is 1055.5. Between seventeen and forty-five years of age it is lower than in the female at fourteen, being about three degrees lower than in the male. The widest range occurs during the first year because the specific gravity is very high at birth and falls to a very low point during the first six months." The observations are apparently numerous enough for persons of ten to thirty-five years of age, but are almost too few for the later years of life and quite insufficient for the earliest. To generalize from nine boys and five girls, whose ages are tabulated as ranging from birth to one year, or from eight boys and three girls noted for the next year is, to put it mildly, exceedingly unsafe. The specific gravity of the blood at that age *may* be exactly what Jones states it to be, but his chart does not demonstrate it (at least not for males), and in view of the peculiar nature of growth during that time very many more memoranda are needed.

Jones finds a resemblance between his curves and those of Leichtenstern for haemoglobin and infers that the variations of this substance are closely related to those of the specific gravity.

The specific gravity of a drop of blood varies somewhat according to the locality, being lower where the blood flows readily (fingers and toes) than where it is obtained with less ease (nape of neck, arms, legs): it is also lowered by active congestion but raised by passive congestion (ligature). Suggestions of racial peculiarities are found in the fact that the specific gravity is rather more in persons with light eyes than in those with dark eyes. Some other variations according to "temperament" and "type" are noted in the original. The specific gravity is also further affected by food and exercise, food usually lowering it in an hour or two, but alcohol raises it, while the action of hot liquids is not uniform; exercise of a gentle character depresses, but prolonged or violent exercise elevates this quality of the blood, and regular exercise (as in the boating men) was found to be associated with a permanently high specific gravity. Sleep generally causes it to rise but the effect is not as constant as the author had supposed from his earlier observations.

The blood of birds appears to be heavier (1059 to 1075), and that of the frog lighter (1034 to 1053), than in man. About half of the article before us is taken up with the measurements made in disease, but in view of the fact that variations of three to ten degrees in each individual are common (page 313), and also in view of the conclusion (No. 6, page 343) that "the specific gravity varies considerably in different persons, so much so that a specific gravity which is normal for one may be a sign of disease in another," and furthermore in view of the circumstance that no definite statement is made as to the number of measurements, these measurements must be read to be appreciated.

If any conclusions are to be drawn from the specific gravity of the blood in pathological conditions, some very different method of collecting the blood will prob-

ably have to be employed, although this method of examining what is collected appears to be easy and trustworthy.

ETIOLOGY AND NATURE OF TYPHUS FEVER.

FORTUNATELY it cannot yet be said that typhus is endemic in this country, though how long we shall be free from it with our present reckless admission of a debased immigration is a question which at best admits only of a doubtful answer. It is still both endemic and epidemic in many parts of Europe, though some of its former favorite haunts, as Glasgow, have been purged of its presence by intelligent sanitary measures. This epidemicity and the conditions of diffusion are well expressed in the terms so frequently applied to this disease: *ship fever, famine fever, army fever, prison fever*, etc.; that is, where great numbers of human beings have been massed together under unhealthy hygienic conditions, typhus has ever prevailed with great intensity. It has in past ages, in innumerable instances, been the scourge of armies. In the late war between the Russians and Turks, fifty thousand men are said to have fallen victims to this disease (Thoinot).

It is in an eminent degree both infectious and contagious. Neither sex nor age has any marked influence. Misery, famine and filth are the most potent predisposing conditions. Marchison's statistics give ninety-six per cent. of cases among the inmates of workhouses and the denizens of slums. The worst epidemics in Ireland have coincided with years of famine. The famine districts of Russia are this present year a hot-bed of typhus. The predisposing influence of over-crowding and want of ventilation is everywhere acknowledged. The contagious nature of the disease is attested by the success of prophylactic measures, and in particular, of isolation of the sick. It is undisputed that typhus is transmitted from person to person, by direct contact. Another fact, well established, is its transmission by clothing, by infected ships, houses, furniture, etc. It resembles in this respect the eruptive fevers, small-pox, scarlatina, measles. According to Marchison, typhus is most communicable by sick persons from the end of the first week till convalescence.

Numerous researches have been undertaken to discover the germ of typhus fever. Those most worthy of mention are the investigations of Hlava, and those of Thoinot, undertaken in collaboration with Calmette. Hlava, when studying an epidemic of typhus at Prague in 1888, referred the cause to a strepto-bacillus which he has figured and described. But this strepto-bacillus is by no means constant, and Cornil and Babes think it only a secondary and unimportant micro-organism. Thoinot and Calmette find numerous microbes, and frequently, but not always, the strepto-bacillus of Hlava. They find constantly in the blood of typhus patients "an interesting organism," which they regard as *sui generis*; unfortunately it has not been cultivated.

The blood of typhus patients is, they say, not cultivable or inoculable in small animals, as rats, guinea-pigs, hares, etc. It is evident then that new researches are needed before the causal agent can be said to be identified.

Empirically, it has been determined that the air is not a good vehicle for the propagation and transmission of the germ, whose power of extension does not exceed a very limited zone around the sick person. Without direct contact with the patient, or with objects that harbor the germ, as clothing, there can be no contracting of typhus (Thoinot). The facts that substantiate this proposition are numerous.

According to most recent authorities, the rôle of potable water in the propagation of typhus fever is not great, at least as compared with the relation of drinking-water to typhoid fever in the transmission of that disease. Thoinot, whose recent memoir we have studied in this connection,¹ thinks it doubtful whether typhus be inoculable by the digestive tube. He believes that the germ has a special affinity for the secretions of the skin, fixing itself to them and being thereby transmitted in the form of exhalations, or communicated to susceptible persons by touch. It is not definitely known how far the lungs are a medium for the inoculation of the infectious agent.

Thoinot finishes his chapter of etiology with these conclusions :

(1) Typhus is, in all probability, the function of a figured germ, whether that described by Hlava, the one studied by myself, or some other micro-organism.

(2) Typhus is endemic in certain countries, nor do we know the reasons of this endemicity; whether or not it may be due to the cultivation of the germ in the soil, to the qualities of the races which perpetrate the existence of the germ by slow and successive transmissions, etc. We are very ignorant on these points.

(3) Typhus becomes epidemic in certain cases and spreads far from its starting place, or invades dense agglomerations of people. The adjuvant conditions of the diffusion are overcrowding the general condition, and physiological depravement (*misère physiologique*) a personal condition, which may, moreover be generalized to a collection of individuals, as in cases of tribal or natural destitution and of famine.

(4) Typhus does not always leave behind a focus of endemicity when it invades an army or a country epidemically, in this respect resembling cholera.

(5) The transmission of typhus is effected by direct contact with the patient, or by contact with objects which are charged with the specific germ from intimate contact with the patient.

(6) The channels of inoculation of the disease, as also the channels by which the germ is expelled from the sick organism, are unknown to us. It is probable that the products of cutaneous excretion play a principal rôle.

(7) The air does not appear to be a vehicle of contagion, and the same may be said of water.

¹ *Typhus Exanthematique*, Traité de Médecine, February, 1892.

THE APPROPRIATION FOR THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE ENDANGERED.

The Army Appropriation Bill lately reported by the Military Committee to the House of Representatives cuts down the usual annual appropriation for the Library of the Surgeon-General's Office, United States Army, one-half; that is, this moderate appropriation is reduced from ten thousand to five thousand dollars. This is a penny-wise, pound-foolish piece of work. If this library were a river or a harbor, what a pitiful sum ten thousand dollars would seem to some members of Congress!

Although it is only a library, which for some unknown motive the Military Committee seeks to cripple, we desire to assure Congressmen that they will find that it has warm champions in the members of the medical profession all over the country, who know what this library has become and the services it has rendered and may render to humanity — meaning thereby, the average voter.

If this item is not restored, either in the House or the Senate, the result must be that the formation of a complete medical library at Washington, which has progressed so successfully for the last ten years, must be stopped.

We most vigorously protest against such an unwise and short-sighted attempt at economical (!) legislation.

MEDICAL NOTES.

DR. KARL VIRCHOW STRICK. — We have received a personal letter from Dr. S. Guttmann, editor of the *Deutsche medicinische Wochenschrift*, asking us to call attention to the shortcomings of a certain Dr. Karl Virchow Strick, who has lately been advertising in the daily press of Cincinnati. The particulars given are exactly those which we published last week on page 224, under the title of "A Warning from Virchow."

MORTALITY OF THE STATE OF NEW YORK IN JANUARY. — According to the report of the New York State Board of Health the mortality of January was greater than that of any month previously recorded, except that of April, 1891, which it nearly equals: it arose from a daily average of 291 deaths in November, of 362 in December to one of 434, exceeding the daily average of January, 1891, by 126 deaths, and that of the entire year 1891 by about 100 deaths. The increase is due to epidemic influenza, what may be termed the third outbreak, which reached its height during this month. Compared with January, 1890, and April, 1891, the two months of the height of previous epidemics, the mortality in early life is less, while that of old age seems to be much greater; from acute respiratory diseases, and also from consumption, the number of deaths is considerably less than in either of the other months. Deaths attributed to diseases of the digestive and circulatory systems are increased; compared with previous outbreaks, this one

has appeared to fall especially upon the aged, the number of deaths of old people being double that of the average for January, and next to that upon diseases of the digestive and circulatory organs.

TO INVESTIGATE THE SUBJECT OF IMMIGRATION.

—The National Senate and House Committees on Immigration, have gone to New York and have begun to take evidence as to the character of the present immigration, with a view to formulating a policy which will exclude at least the more undesirable of the enormous number of foreigners who annually come to this country.

AN EPIDEMIC OF INTESTINAL DISTURBANCE IN VIENNA. — Immediately after the recent epidemic of influenza began to decline in Vienna, there appeared a wide-spread epidemic, characterized by fever, acute colic and dysentery, the dejections often containing blood. At first it was attributed to the drinking-water, but this has been analyzed and found to be of normal purity. A difference of opinion exists as to its having any connection with the epidemic of influenza, and time will be necessary before its etiology can be decided.

BOSTON AND NEW ENGLAND.

DEATHS IN BOSTON FOR THE WEEK. — The total number of deaths reported in Boston during the past week was 196 as against 201 the corresponding week last year, making the death-rate for the week 22.2. This is the first week for three months in which the death-rate has not been higher than it was a year ago. The deaths from consumption were 24, pneumonia 32, bronchitis 14; persons over sixty years of age 40. There were 89 cases of scarlet fever reported, with eight deaths.

A COMMISSION TO INVESTIGATE THE PUBLIC INSTITUTIONS OF BOSTON. — The Mayor of Boston has appointed a commission to inspect the public institutions of the city, to examine their condition and present management and to report thereon in writing, together with such recommendations as may seem to them desirable. This commission consists of Mr. Frank Morison, Mr. Thomas P. Ring, Dr. Charles P. Putnam, Dr. Morton Prince, Mrs. William McCarthy, and Miss Annette P. Rogers. The commission has already organized and has made the following announcement: "The duties of the committee are to investigate the system under which the public institutions are conducted, with a view to ascertaining its efficiency or inefficiency, and also to inspect the institutions themselves; to report upon their condition, method of management and needs, with a view to recommending any change in the law, the ordinances, the buildings or the management which in their opinion would be proper or desirable." The institutions are as follows: The almshouses at Charlestown, Long Island and Rainsford Island; the Marcella-Street Home for Neglected Children; the House of Industry, House of Reformation and Truant School on Deer Island; the Lunatic Hospital at South Boston: the buildings at Austin

Farm; and the County House of Correction at South Boston. Communications and suggestions for investigation, as well as recommendations, may be sent to Frank Morison, 60 Congress Street. All such communications must be signed and contain the address of the writer."

COMMITTEE HEARINGS OF THE MASSACHUSETTS LEGISLATURE. — The Committee on Public Health have reported to the next legislature the subject of establishing free warm baths in cities. The same committee reported it inexpedient to legislate on the order that no stables in cities shall be within 150 feet of dwellings. The Committee on Public Charitable Institutions recommended that the petitioners for an appropriation for the Boston Emergency Hospital have leave to withdraw.

MASSACHUSETTS EYE AND EAR INFIRMARY. — The annual report shows that during the past year 11,926 new eye patients and 4,578 new ear patients were treated at the infirmary, an increase of 1,215 over 1890. The number of house patients was 853. The new building for the ear department was completed, and has been occupied since the first of August. The old building is now used entirely for the eye department. A plan and description of the new aural building is given in the report. It was made by remodeling the two houses on Charles Street, next adjoining the infirmary, but separated from it by a passage-way. Except for a bridge connecting the two buildings, the eye and the ear departments are now separate. The ground floor of the new building is devoted to out-patients, above this are three floors containing wards, operating-room and other necessary rooms. The present building is, probably, the most complete hospital especially devoted to diseases of the ear in this country.

TRICHINOSIS. — An epidemic of trichinosis is reported in the town of Coleraine in Franklin County, Mass., in which about thirty persons have been taken ill and two deaths have occurred. These persons were taken ill about February 1st, and their illness is probably due, as usual, to the eating of raw or imperfectly cooked pork. The persons affected are mostly Austrians, Bavarians, and French Canadians, operatives in a mill in Coleraine. With one exception, all the persons attacked are convalescing. The symptoms were general fever, swelling of the face, eyelids and extremities. Perspiration, severe pain in all parts of the body, muscles sore. Contraction of the flexors of legs and arms. This is the most serious outbreak of trichinosis ever reported in the State, and these are the first deaths from this cause since 1870.

TUBERCULOSIS AMONG CATTLE IN MAINE. — The Maine State Veterinary Surgeon, in his annual report, shows that the whole number of cases of tuberculosis reported to the State Cattle Commission during the past year was 117. A great deal is said about tuberculosis in Massachusetts, and the reasons given for quarantine against Massachusetts cattle. Only half as

many cattle were destroyed as in the previous year, owing, the commission believe, principally to restrictions to importations from Massachusetts.

NEW YORK.

DR. LEWIS A. SAYRE. — On the 29th of February, the Rev. W. R. Huntington, Rector of Grace Church, sent to Dr. Lewis A. Sayre, who is one of his parishioners, the following graceful little tribute in verse. On that day the veteran surgeon, who was born in leap year, celebrated his eighteenth birthday, being seventy-two years old.

DEAR DOCTOR SAYRE:

And is it true
That Nature set her clock for you
Some four-and-fifty years too slow?
How clever of her to foreknow
That you would keep yourself so young,
So firm of heart, so sound of lung,
That she would never be detected,
Nor you so much as once suspected
Of being older by a day
Than Leap Year records seem to say!
Eighteen, dear friend, or seventy-two,
Which e'er it be, Good luck to you.

MORTALITY FOR THE WEEK. — During the week ending February 27th, the number of deaths reported in the city was 910, an increase of two over the record of the preceding week, and 58 above the average of the corresponding week for the past five years. This mortality represents an annual death-rate of 27.70 per thousand of the estimated population. The deaths from pneumonia were unusually numerous, 170; against 143 for the week preceding and 125 for the average of the corresponding week in the past five years. There were four deaths from typhus fever and three from small-pox. The deaths from influenza, which amounted to 25 during the week ending February 20th, were 20 in number.

TYPHUS FEVER. — Up to March 4th there had been reported 130 cases of typhus fever, with 7 deaths. As a matter of precaution, all the inmates of a tenement-house on East 12th Street occupied by Russian immigrants, where a large number of the cases have developed, have been removed to quarters on North Brothers' Island; and the sanitary authorities are endeavoring to keep any individual known to have come in contact with a typhus fever patient under close observation. A few of the attendants at the fever hospital on North Brothers' Island are said to have contracted the disease, but none have as yet died of it. The joint committee appointed by the Senate and House of Representatives have arrived from Washington and commenced their investigation of the working of the immigration laws and the introduction of typhus fever by the passengers on the *Massilia*.

The steamer "CALIFORNIA," which arrived on March 3d with 456 steerage passengers on board, was detained at quarantine. During the voyage one of the passengers, a Russian Hebrew, developed small-pox, and one case each of scarlet fever and measles also occurred.

DEATH AFTER THREE DOSES OF BROMIDE OF POTASH. — On the morning of March 3d, a bar-tender, who was locked up the night before in a padded cell in the Hoboken City Prison, while suffering from delirium tremens, died after having been given three doses of bromide of potassium by the police sergeant in charge, no physician having been called in to attend the case. If it is true, as stated afterwards by the captain of the Hoboken police, that it is a common thing to give bromide of potassium to delirium tremens patients brought to the station-house, without special medical advice, and that this is done in police stations all over the country, it is certainly high time that such a practice should be put an end to. In this case the City Physician, Dr. Simon, who was hurriedly sent for when too late, expressed the opinion that the man was dangerously ill when taken to the station-house.

SHORT GENERATIONS. — In taking the new census of the State of New York, a baby, three months old, was discovered in the town of Warrensburg, near Troy, whose mother is not yet fifteen, whose grandmother is thirty-three, and whose great-grandmother is only fifty-four years old.

Miscellany.

NEW BUILDINGS FOR THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.

The Board of Trustees and the Faculty of the Jefferson Medical College have just completed the purchase of two large lots on Broad Street, giving them a frontage of about 300 feet, and a depth of 150 feet, upon which they will proceed to erect at once a handsome hospital, lecture-hall and laboratory building. The estimated cost of the buildings is \$500,000. The hospital will be built not only as a suitable building in which to care for the sick and injured, but also will be provided with a large amphitheatre for clinical lectures. The basement of the hospital will be given over to the various dispensaries, each of which will be provided with large waiting and physicians' rooms as well as rooms for direct teaching of the students. The buildings will be absolutely fireproof and provided with patent sprinklers in case their contents catch fire. By the erection of three commodious buildings, the laboratories where delicate work with the microscope or apparatus is carried on, will be separated from the college hall where didactic lectures are given and so will be free from any jarring produced by the movements of large classes. With the hospital on one side affording clinical facilities and the laboratory on the other side of the college hall for scientific research and training, the college will then be most favorably situated for giving thorough instruction in medicine. Further than this, immediately across the street is the Howard Hospital and on the adjoining corner the Ridgeway Branch of the Philadelphia Free Library, which contains all the scientific works belonging to this wealthy corporation. The new site is even more favorably situated in regard to the centre of the city than the old one at 10th and Sansom Streets. The move has been made necessary by the large number of students

who are now being instructed in this institution and because the Faculty desire to keep the school and hospital in the foremost rank of medical education in this country.

The buildings will be ready for occupancy in the session of 1893-94.

THERAPEUTIC NOTES.

THE TREATMENT OF WOOPING-COUGH.¹—According to the *Bulletin Générale de Thérapeutique*, Galvagno has employed antipyrin combined with resorcin in the following formulae in the treatment of whooping cough in children:

R Distilled water	3 fliss.
Resorcin | . . . . .	3 gr. xv.
Antipyrin | . . . . .	55 gr. xv.
Hydrochloric acid	gtt. x.
Syrup	3 t.
Or,	
R Syrup of acacia	3 fliss.
Resorcin | . . . . .	3 gr. xv.
Antipyrin | . . . . .	55 gr. xv.
Syrup	3 t.

Sig. Of this, three to five dessertspoons are given each day.

Under this treatment the duration of the disease, according to the author, does not exceed twelve days.

PROPHYLAXIS OF INFLUENZA.—At a recent meeting of the Académie de Médecine, Ollivier said that he had found cod liver oil a prophylactic against influenza, especially in children. Vallin agreed with the speaker, and recommended also careful antisepsis of the mouth, nostrils and throat.

EUPHENON: A SUBSTITUTE FOR IODOFORM.²—Euphenon is a very fine, yellow powder, having neither a disagreeable nor a strong odor. It is one-fifth as heavy as crude iodoform, while the finely-powdered iodoform is two and a half times heavier than euphenon. It is soluble in alcohol, ether, chloroform, benzine, and in fats and oils. Vulpinus finds that anthrax bacilli are generally rendered inert by it. Staphylococci were essentially checked in their development, although perhaps not so much as under the influence of iodoform. Pyocyanes seemed not to be influenced by euphenon. Experiments to determine its toxicity indicate that euphenon is less poisonous than iodoform. It may be used locally in the form of ointment, powder and gauze. It is recommended when rapid and vigorous granulations are to be excited.

Correspondence.

A LOW VALUATION OF A CONSULTANT'S SERVICES.

AN eminent Boston surgeon was called in consultation to a neighboring city. His services consisted of two journeys to that city and back, the aspiration of a tumor, the examination of the contents by an expert pathologist, and the necessary correspondence. The bill rendered the estate, an estate which was said to be ample, and understood to be so at the time of sending the bill, was for \$105. It evoked the following reply from the executor of the patient's will:

"Had I been prostrated to the ground by a thunderbolt from the heavens on a clear summer day, and retained

sufficient consciousness to have realized it, the shock would not have been much greater than that which I received as I looked over the bill you sent me against the estate of Mrs. ——.

"I knew that Dr. —— of this city had consulted a Boston physician, and I have recently paid his bill, amounting to \$190, which I supposed, of course, included the pay for your services (and which I hope may be the case); and even at that I thought the bill was *tremendous*. I feel that Dr. —— did *very wrong* in entailing such an expense, in calling you, as he had previously told me that Mrs. —— could not possibly live *over* three months; and it seemed to me that if any examination was to be made, you would both be amply repaid by whatever information you may have gained thereby; and I cannot refrain from saying that I think the call upon you was wholly unnecessary, and, even if it had been, that your charge for your service was *unjust* and *beyond all reason*; for I don't believe there was ever a human being who possessed sufficient knowledge or ability to make his services worth \$100 a week, while yours was only rendered for a few hours upon a lonely, feeble and emaciated old lady to whom death was not only a relief, but a great blessing; and if I *have* to pay your bill, I shall be obliged to take all the time the court or law allows; as if any more unexpected bills come in, there may not be any "residue" to pay to the comparatively poor young lady who is to receive what remains after the estate is settled.

"You may think my language emphatic, but I can employ no milder terms in giving expression to my feelings and opinions."

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, FEBRUARY 27, 1892.

CITIES.	Estimated population for 1890.	Reported deaths.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung disease.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York	1,515,300	910	348	16.02	22.58	2.19	1.60	5.06
Baltimore	600,859	496	193	19.68	24.60	1.60	5.69	5.06
Philadelphia	1,046,964	505	151	14.44	12.92	2.47	3.80	6.27
Brooklyn	806,433	402	141	17.76	20.16	6.45	—	6.96
St. Louis	451,770	181	54	12.65	9.35	4.55	3.55	1.10
Boston	489,000	197	52	8.67	23.97	1.02	—	5.61
Chicago	444,439	226	73	32.04	—	—	—	—
Cincinnati	296,908	148	53	11.83	11.88	—	—	8.74
Cleveland	262,000	102	29	6.84	14.70	—	—	4.90
New Orleans	342,039	—	—	—	—	—	—	—
Pittsburg	249,069	107	56	16.25	20.46	.39	2.79	5.58
Baltimore	230,202	112	38	10.68	33.82	—	.89	5.34
Nashville	81,168	43	11	2.33	23.30	—	—	2.33
Charleston	65,165	31	8	2.94	2.94	—	—	2.94
Portland	36,425	14	5	36.43	—	—	—	—
Worcester	34,145	14	5	32.53	18.78	2.13	—	—
Lowell	77,606	45	17	6.66	22.22	—	—	4.44
Fall River	74,386	39	15	—	34.50	—	—	—
Cambridge	70,628	31	11	9.69	9.69	—	—	3.23
Lynn	55,727	19	5	5.38	22.22	—	—	5.26
Lawrence	44,441	—	—	—	—	—	—	—
New Bedford	44,179	—	—	—	—	—	—	—
New Bedford	40,733	14	5	—	7.14	—	—	—
Salem	30,861	14	6	—	—	—	—	—
Chelsea	27,909	9	4	—	—	—	—	—
Everett	27,701	7	3	—	37.80	—	—	—
Watertown	25,445	—	—	—	—	—	—	—
Gloucester	24,651	8	2	—	25.00	—	—	—
Newton	24,379	7	1	—	29.56	—	—	—
Malden	23,031	9	1	11.11	22.22	11.11	—	—
Plymouth	22,701	10	3	16.00	—	—	—	—
Waltham	18,707	7	1	14.29	—	—	—	—
Pittsfield	17,281	4	2	50.00	—	50.00	—	—
Quincy	16,723	3	0	—	—	—	—	—
Northampton	14,908	1	0	—	—	—	—	—
New Bedford	13,257	1	0	—	—	—	—	—
Medford	11,079	1	0	—	—	—	—	—
Hyde Park	10,193	3	1	—	33.33	—	—	—
Peabody	10,158	1	0	—	—	—	—	—

Deaths reported 3,898: under five years of age 1,244; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 600; acute lung diseases 697; consumption 364; diphtheria and croup

¹ Therapeutic Gazette.
² Therapeutic Gazette, February.

184, scarlet fever 93, typhoid fever 71, diarrhoeal diseases 36, erysipelas 21, whooping-cough 15, cerebro-spinal meningitis 14, measles 13, malarial fever 10, small-pox (New York) 3.

From diarrhoeal diseases New York 9, St. Louis 9, Brooklyn 5, Chicago 1 each. From erysipelas Chicago 1, each Washington and Lowell 1 each. From erysipelas New York 6, Brooklyn 4, Chicago, Philadelphia and Worcester 2 each, St. Louis, Boston, Cleveland, Washington and Fitchburg 1 each. From whooping-cough Chicago 4, Philadelphia, Boston, Washington and Cambridge 2 each, New York, St. Louis and Pittsburgh 1 each. From cerebro-spinal meningitis Chicago 5, New York 2, Philadelphia, Brooklyn, St. Louis, Boston, Washington, Worcester and Waltham 1 each. From measles New York 10, Brooklyn 3. From malarial fever Brooklyn 4, Chicago 3, New York, Philadelphia and Cleveland 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending February 20th, the death-rate was 21.1. Deaths reported 4,125; acute disease 1,200, the remainder chronic. (London 450, whooping-cough 177, measles 86, diarrhoea 48, diphtheria 23, scarlet fever 23, fever 18, small-pox (Liverpool and Oldham 1 each) 2.

The death-rates ranged from 13.0 in Derby to 28.2 in Preston; Birmingham 22.0, Bradford 15.5, Croydon 18.2, Hull 19.4, Leeds 17.4, Liverpool 25.1, London 20.7, Manchester 23.6, Nottingham 23.2, Portsmouth 22.0, Sunderland 15.7, Wolverhampton 16.9.

METEOROLOGICAL RECORD.

For the week ending February 27, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-	Thermo-	Relative	Direction	Velocity	Weath'r.	Rainfall in inches.
	meter	meter					
	Daily mean.	Daily mean.	Minimum.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.
S.—21	30.50	34	35	93	95	95	95
M.—22	30.53	37	40	94	91	91	91
T.—23	30.54	34	38	90	90	90	90
W.—24	30.48	36	38	93	91	88	88
TH.—25	30.48	36	38	93	90	88	88
F.—26	30.48	36	42	100	92	96	96
S.—27	30.70	21	23	19	73	73	73
	30.47	34	36	31	91	90	90
					12	11	.01

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. * Indicates trace of rainfall.

Mean for week.

temporary duty. February 16, 1892. Granted leave of absence for seven days. February 24, 1892.

CARTER, H. R., surgeon. Detailed as recorder, Board of Examiners. February 20, 1892.

WHEELER, W. A. passed assistant surgeon. Ordered to examination for promotion. February 16, 1892.

VAUGHAN, G. T., passed assistant surgeon. Detailed as executive officer, Supervising Surgeon-General's Office. February 27, 1892.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, March 14, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. G. B. Shattuck, "Pneumonia in Boston during the Recent Epidemic of Influenza." Dr. J. W. Farlow, "A Case of Sudden Death in a Rubber Factory: Inquiry into the Effects of the Inhalation of Naphtha."

G. G. SEARS, M.D., Secretary.

THE AMERICAN MEDICAL ASSOCIATION will hold its fortieth annual session at Detroit, Mich., June 7, 8, 9 and 10, 1892. Dr. J. S. Cain, of Nashville, Tenn., will deliver the Address in General Medicine; Dr. John B. Hamilton, of Chicago, Ill., the Address in General Surgery; Dr. Charles A. Lindsay, of New Haven, Conn., the Address in State Medicine. Dr. Henry A. Walker, of East Detroit, is the Chairman of the Committee of Arrangements.

APPOINTMENT.

DR. E. M. BUCKINGHAM, has been appointed Physician to the Children's Hospital, Boston.

RECENT DEATHS.

STEPHEN CUSHING, M.D., M.M.S.S., died in Boston, February 1st, aged fifty. During the war he served as medical cadet in the army and later as assistant surgeon in the navy. He graduated from the Harvard Medical School in 1866.

HEINRICH ROSENTHAL, M.D., editor of the *Allgemeine Medizinische Central Zeitung*, died February 7th, in Berlin, aged fifty-eight.

SAMUEL G. JARVIS, M.D., of Claremont, N. H., died March 5th, aged seventy-five. He graduated from Jefferson Medical College in 1838, and since 1840 has practised in Claremont, representing the town in the legislature in 1875 and 1876.

BOOKS AND PAMPHLETS RECEIVED.

Treatment of Laryngeal Phthisis. Robert Levy, M.D., Denver, Col. Reprint. 1891.

The Therapeutic Aspect of Some Ovarian Disorders. By Edward W. Jenks, M.D., LL.D., Detroit, Mich. Reprint. 1891.

Some Unusual Fractures of the Leg. By Fred Jenner Hodges, S.C., M.D., Lecturer on Surgery, Chicago Polyclinic. Reprint. 1891.

Observation and Experiment in Phthisis. A Reply to Professor Tyndall. By Thomas J. Mays, M.D., Philadelphia. 1892.

Sleep, Insomnia and Hypnotics. By Germain Sée, M.D. Translated by E. P. Hard, M.D. Detroit: George S. Davis. 1891.

Tuberculin: The Value and Limitation of its Use in Consumption. By Charles Denison, A.M., M.D., of Denver, Col. Reprint. 1891.

Report of Committee on Disposal of Waste and Garbages, Presented at the Nineteenth Annual Meeting of the American Public Health Association.

Empiricism; Rational Practice; Practice Under Guidance of Law. A Lecture to Medical Students. By Charles S. Mack, M.D., Ann Arbor, Mich. Reprint. 1892.

Considérations Pathogéniques sur l'Hémoperméie d'Origine non Inflammatoire. Par Le Dr. R. Jamin, Laurent de la Faculté de médecine. Paris. Reprint. 1891.

Trendelenburg's Posture in Gynaecology. Atresia of the Genital Tract. Total Extirpation versus Leaving a Stump in Operation for Uterine Fibro-Myomata. By Florian Krug, M.D., New York. Reprints. 1891-92.

Fissural Diagrams. The Fundamental Principles of Anatomical Nomenclature. American Reports upon Anatomical Nomenclature, 1888-90. The Morphological Importance of the Membranous or other Thin Portions of the Parieties of the Encephalic Cavities. By Burt G. Wilder, M.D., Professor in Cornell University. Reprints. 1891.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 5, 1892.

GEO. R. BRUSH, medical inspector, ordered to Navy Yard, Brooklyn, N. Y.

EDW. KERSHNER, medical inspector, from Navy Yard, New York, and to U. S. S. "San Francisco."

J. H. CLARK, medical inspector, from the U. S. S. "San Francisco," and ordered home.

A. L. GIBSON, medical director, detached from Naval Hospital, and to special duty New York, attending officers of the Navy and Marine Corps.

W. K. SCOFIELD, medical director, detached from special duty New York, attending officers of Navy and Marine Corps and wait orders.

E. S. BOGERT, medical director, detached from Medical Examining Board and to Naval Hospital, Brooklyn, N. Y.

C. M. DE VALIN, assistant surgeon, to Naval Hospital, Norfolk, Va.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING FEBRUARY 27, 1892.

PURVIANCE, GEORGE, surgeon. Detailed as chairman, Board of Examiners. February 20, 1892.

HAMILTON, J. B., surgeon. Detailed for special duty. February 18, 1892.

STONE, G. W., surgeon. Detailed as member, Board of Examiners. February 20, 1892.

IRWIN, FAIRFAX, surgeon. Ordered to Norfolk, Va., for

Lecture.**ON THE MECHANISM OF THE MAMMALIAN LIMB.¹**

BY HARRISON ALLEN, M.D.,

Professor of Comparative Anatomy and Zoölogy in the University of Pennsylvania, etc.

In all animals the limbs are adapted for locomotion in one of three ways, and each of these is in fixed relation to the plane of support: the first by which movement is made through air; the second by which it is made through water; and the third by which it is made on the ground. Observe, we speak of motion in air, in water, and on the ground. Flying and swimming mammals are surrounded by the medium through which they move, whereas in terrestrial mammals the limb is on the ground. The few exceptions that can be made to this statement will not interfere with its truth in general. Again the size of the limb (notably the foot) in its proportion to that of the body decreases as we pass from the flying to the walking animal.² Thus the wing of the bat in proportion to that of the body is immensely larger than are the paddles and flukes of a whale or seal, and both of these again, are larger than the foot of any of the terrestrial animals. In a word, the size of the limb disposed for progression is in direct ratio to the density of the medium through or on which the animal moves.

Let us examine the skeleton of the dog with reference to the relation which the limbs have to each other, and to the influence which is exerted upon them by the weight of the head and spine. We notice in the first place that the anterior extremity is supported entirely by muscle; for we do not acknowledge that limbs with clavicles are better adapted for support than are those without these bones, since when the extremity is fixed at a small movable point to the breast-bone it gives little or no assistance to the terrestrial movement. Indeed, the clavicle does not appear until the limb is adapted for kinds of motion with which terrestrial planes of support have nothing to do. Now, in order that the anterior limb be firmly supported, its motion precisely defined, its strength as well as its mobility rigidly preserved, these muscles must be of enormous size and power. We find that the lines of origin of this muscle-mass are secured from a large region, namely, the back of the skull, the side of the chest, the sternum, the vertebral aponeurosis and even, in some forms, the hip-bones. All the muscles which thus arise are in the forms of sheets, either simple or folded once, twice or three times. Often from a sheet we may have ribbons evolved, or from a second sheet bandage-like layers, but never thong-like or cable-like bands. These sheets are wonderfully rich in nerves, and extend to, and partially imbed, the shoulder-blade so that no part save that which lies directly at the shoulder-joint is free. They extend down along the arm at varying distances, always reaching as far as the humerus and not infrequently the wrist.

How different is everything in the hind limb! The hip-bone is fixed to the line of the spine; and the limb, not being supported by muscle-masses, has in every

part an entirely different aspect from that of the front limb, and the muscles which do arise from the line of the spine are confined to a surface scarcely any larger than that of the hip-bone, and act, of course, not on the part which is homologous to the scapula, but on the lower limb-segments. They show slight disposition to extend forward (for example, as in the possum), and scarcely any to extend backward along the caudal vertebrae, yet they preserve the same tendency, as do the fleshy masses of the anterior extremity, to send bundles down (that is, distally) to reach in most forms to points as far as the knee or even the ankle. Since the nerves are more numerous in the sheet than the spindle forms of muscles, it follows that the nerves going to the posterior extremity are relatively fewer than those going to the anterior.

Let us retrace our steps a moment to consider the two limbs from an entirely different point of view than the one above accepted. Assuming that vertebrate life found its first expression in aquatic animals, and remembering that the most important feature in the life of aquatic animals is the means by which the mechanism of respiration is adapted to the medium of water, it follows that problems of the mechanism of the limb in aquatic creatures will be essentially different from air-breathing forms inasmuch as they all possess respiratory organs which are fixed to the sides of the neck, or at least to the region back of the head, since in some types, as the fishes, there is no true neck. It will be at once seen, accepting as correct that an anterior extremity demands for high degrees of efficiency an extended surface for the origin of its muscles, that much of such surface is lost in gill-bearing vertebrates, and it is probably true that this accounts for the fact that no such forms possess large anterior extremities. Take, for example, the proteus-type of waternewt, which is the best expression known of this phase of development. We have here the gill-arches in front of the small anterior limb, and the chief motion is obtained by the action of the long flexible tail rather than by the limbs. In the frog, the gill-arches indeed disappear, yet, even here, the anterior limb remains of small size.

In mammals the relation existing between the motion of the anterior extremity and the respiratory act must be remembered. It is not accidental, I am sure, that such an extremity is placed at the side of the front of the thorax. The act of breathing is assisted by many of the muscles which move the anterior extremity whereas none of the posterior have any connection with respiration. The posterior extremity, on the other hand, is held to the line of the spine by a fixed pelvic girdle. The exceptions to this rule are so unimportant that they cannot be separately treated. Not only is each hip-bone fixed to the side of the trunk, but is also joined to its fellow at the pubis (but often excepted, and seals always), and the relations of both bones are held to be, not with respiration, but to the functions of the organs of the abdomen, especially to the rectum and the organs of generation.

We have seen that the shape of the limb is in relation to the density of the medium through which it is used, and now we will notice that in terrestrial forms the motions of the limbs hold an equally exact relation to the centre of gravity of the body. In the most rapid motion of the terrestrial type the front limb can retain its plane of support on the ground until the trunk has passed along so far as to bring the centre

¹ A Lecture delivered at the Academy of Natural Science of Philadelphia, February 19th, 1862.

The curious fact that we have one phrase to express motion through the water, which is the act of swimming, another phrase to express motion through the air, which is the act of flying, but no one phrase to express motion on the ground, is the last named motion being included in such terms as the acts of walking, running, leaping, etc.

of gravity in a line which will pass vertically upward through the foot. In a subsequent attitude of support, the hind limb can reach forward as far as or even beyond this line.

It is a remarkable circumstance that both in the anterior and posterior feet, the ground is reached by the outer border of the foot, and not as one would suppose at first sight, by the foot being brought down in a horizontal position. In all quadrupeds the outer border of the leg and the outer border of the foot receives distinct nerves. In the fore limb it is the ulnar, in the hind limb it is the musculo-cutaneous and short saphenous nerves. The outer border is further often adorned with fringes of hair, or other appendages either in the form of scutes, warts, or of special folds of skin. In a word, the outer border of the foot and leg, taken as a whole, is apt to be distinct from the rest of the body, not only in the way it is used in progression, but in its domination of nutritive processes.

The cycle of movement of the foot in the act of walking is something as follows: the foot in the first stage (that is, before being brought to the ground) is in a position midway between pronation and supination. The outer border as it reaches the ground is held in this position but for an instant, since the body surging forward by the aid of the other three legs, soon brings the main lines of weight upon the foot, which now rests on its widest surface of contact. The impact is somewhat gradually transferred to the inner border, along which, when the main body weight is beyond, the foot is lifted from the ground.

It is noteworthy that when used in any other way except for support on the ground (I mean by this firm contact against a resisting terrestrial surface), limbs of all mammals resemble one another; for example, forms so distinct in systems of classification as the sloth, the bat, the seal and the duck-mole are associated in one respect, namely, by the absence or diminution of impact of the several parts of the limbs. The characters of the bones of the arm and thigh, since they do not support the body on the ground, are almost exactly alike in the sloth and the bat. In like manner, the general outline of the scapula in man, the ape, the kangaroo and the jumping-mouse, conform to a single plan (that is to say, the supra-spinatus fossa is narrower than the infra-spinatus), since in none of these animals is the anterior extremity used for support. Likenesses which are due to strain, as in the bat and sloth, are recognizable; as well as those due to adaptation of the anterior extremity to prehension, as seen in men and the apes; or those due to adaptation to the swimming habit in creatures so far apart as the duck-mole and the seal; but all these, nevertheless, may be associated by a merely negative character, namely, the absence of impact.

When walking with a closed umbrella, using it as a cane, one brings the ferrule down on the ground at every step. A leg of a living animal periodically adjusted to the ground like the closed umbrella, is said to be modified by *impact*. In a word, it is impact that takes place in the umbrella every time it is brought to the ground. When the umbrella is held in mid-air and opened, the movement is independent of impact. An animal using its anterior extremity in a similar manner (as in a bat unfolding its wings for flight), the several parts are said to undergo *strain*. The difference between impact and strain in a general

way implies a difference in the method of progression, that is to say, the difference between strictly locomotor and prehensile use.

I will now attempt to make an application of the above stated facts, which I fear some will think radical. I allude to the study of the causes of certain fractures in the human body. May I venture the opinion that without an understanding of the mechanism of the limb in the lower animals, the etiology of lesions of the limb in man cannot be explained? The following is an example of a lesion through strain: A sailor falling from the deck of a vessel to the bottom of an open hold, catches at a rope for support; he sustains himself but for an instant; he feels a sharp pain in the region of the shoulder; he lets go his grip and again falls. Examination shows that he has fractured his shoulder-blade.²

Now the man has done exactly what a monkey will do many times a day in the forest, as he springs from swaying vine to pendant bough; but the animal incurs no risk to the shoulder-blade or to any other bone. The man has attempted something, in an excursive way, to which his structure appears to be adapted, but in the attempt he fails and incurs injury. Unless an analysis of such a lesion can be reasonably undertaken by comparing the manner in which this act can be safely performed with that which results in disaster,—in a word, of a comparison of the parts in a monkey and in man,—no exact clue to the fracture can be vouchsafed. Let me also invite your attention to a lesion by impact. Sir Charles Bell has drawn the figure of a man on a stumbling horse; the man is in the act of being thrown forward. The position of the anterior limb of the horse and that of the arm of the man are the same. In an instant afterward both limbs will come to the ground, the horse's to enter into the second stage of the foot's normal cycle, the man's to break. In placing his anterior extremity forward as though it was well adapted to move on the ground (though it has long since been adapted for an entirely different class of work), he applies it for a purpose to which it is in reality unfitness, and disaster ensues.

I have been interested in studying the position of the hand in fracture, at the lower end of the forearm. The text-books teach that the hand comes to the ground directly in the middle, or on the thumb side. I have concluded, when the body falls prone, that the hand comes down on the little finger side as is normally the case in the lower animals. An examination of the specimens preserved in museums has convinced me that this assumption is just as capable of explaining the deformation as is any other, and is sustained in addition by an examination of its literature. A short time ago I stumbled and fell. I instinctively threw the right hand forward to break the force of the fall. I found when I examined the parts that my hand was bruised along the little finger side, and the clothing soiled on the corresponding part of the forearm. In the explanation of a lesion, created as it is by an error of impact, the line of reasoning essential to it is quite different from what is met with in strain; but the problem suggested is like it in one regard, that it is profitable to the study of the manner by which the parts of a limb adapted for strain are easily disadjusted when called upon to

² Dr. Joseph Leidy: Proceedings of the Philadelphia County Medical Society, 1891, p. 73.

perform the duties of impact, and also like it in another way that it can be best explained by a knowledge of comparative anatomy.

Original Articles.

ORIGIN OF THE RED BLOOD-CORPUSCLES.¹

BY CHARLES LOUIS MIX, A.M.

In the life-history of any mammal there are to be found two sorts of red blood-corpuscles: (1) the nucleated, found during early embryonic life; (2) the non-nucleated, found during later embryonic and throughout extra-uterine life. It is therefore convenient in consideration of the origin of red blood-corpuscles to divide the subject into two portions, the origin of red corpuscles in the embryo, and the origin during extra-uterine life. The first division naturally falls into two minor ones, the origin of the corpuscles (1) during the early stages of the embryo, (2) during later fetal life.

I. ORIGIN OF THE RED BLOOD-CORPUSCLES OF THE EMBRYO.

A. DURING THE FIRST STAGES OF THE EMBRYO.

In the very young embryo red corpuscles are nucleated cells, at first possessing a very thin layer of protoplasm often overlooked by investigators, but which later develop more protoplasm and become impregnated with hemoglobin, thus forming true embryonic nucleated red corpuscles. Embryologists differ both as to the place and method of origin, one class advocating the mesenchyma of the body of the embryo, another class the *area pellucida* and *area opaca*, especially the latter. Of those who belong to the first class the theories of Reichert, Ziegler and Wenckebach may be mentioned.

Reichert² believed that the first blood-vessel to arise was the heart, which developed from a mass of cells of which the central ones became embryonic nucleated red corpuscles, and the peripheral ones the endothelial lining of the heart. According to this theory, therefore, the blood is mesodermic in origin.

Ziegler³ thought that the cavities of the blood-vessels were developed from gaps in the mesenchymatous tissue. "The systems of blood and lymph-vessels," says Ziegler, "arise from remains of the body-cavity (gaps between the primary germ-layers), which in the universal extension of the mesenchyma remain as vessels, lacune or interstices, and which are ultimately surrounded and taken up by it." The formed elements of the blood, especially the embryonic nucleated red corpuscles, arise in various places in the lacune or gaps by rapid proliferation of the mesenchyma cells there present.

Wenckebach⁴ found that in the case of *Perca fluviatilis* the blood-corpuscles arose from a compact mass of cells, the "intermediary cell-mass," found under the

chordæ; and he goes on to say that "the cells are gradually loosened by the blood-stream and carried along by it," for he believed that heart and plasma were formed before there were any corpuscles. Later, while working upon another embryo, he discovered the origin of the intermediary cell-mass: it arises from cells which grow in between the alimentary canal and notochord from the mesoblastic somites.

In a late paper Ziegler⁵ has described the intermediary cell-mass, saying that the central cells become the first blood-corpuscles and the peripheral ones go to form the walls of the first veins. He also returns to Reichert's old view, for he says that some of the first embryonic blood-corpuscles are also formed in the heart and aorta.

Of those who claim that the *area opaca* is the true source of embryonic nucleated red corpuscles, the theories of Kölleker, Klein, Foster and Balfour, His and Rückert deserve notice.

Kölleker's theory, which for convenience may be called the solid-cord-formation theory, is really an extension of Reichert's and Remak's. Reichert believed that the first embryonic corpuscles were formed in the region of the heart; Remak disagreed with him and declared that they were formed in the *area opaca* or *sanguinea*, as he would name it, since its function is predominantly blood-formation. Kölleker, in his "Embryology," says that both of these authors are correct, and that furthermore, the first corpuscles may arise in the *area pellucida*, wherever, in fact, new blood-vessels develop. According to him the mesoblast cells found in the *area opaca* between the two primary germ-layers arrange themselves in cylindrical or irregularly limited cords which form a network, in the meshes of which there are groups of other cells forming the "Substanz-inseln" or "connective-tissue islands." At the beginning of the second day in the chick the cords become better marked, owing to the formation in their interior of a hollow limited by distinct walls. The walls develop from the superficial cells of the cords, and form the endothelial lining of the vessels; the hollow is produced by a fluid secreted by surrounding cells, which pierces the walls of the cord, forming the blood-plasma. At the points where the fluid enters the cord the cells composing the wall are pushed aside in heaps called "Blut-inseln" or blood-islands. The cells of the latter at once begin to acquire hemoglobin, and being very loosely bound together they separate easily and fall into the blood-plasma, becoming nucleated red corpuscles.⁶

Klein's⁷ theory may be styled the vacuole theory. According to him, the first blood-vessels are formed from certain mesoblast cells of the *area opaca* in which vacuoles appear. The vacuole of each cell increases rapidly in size, pushing the nucleus to one side, and crowding out the protoplasm until it is a peripheral film in which nuclei begin to appear. These nuclei then becoming differentiated into protoplasmic cells, form a wall about the vacuole which may now be regarded as the lumen of a blood-vessel. From time to time cells are budded off from the inner side of the wall, and falling into the lumen become by the acquisition of hemoglobin embryonic nucleated

¹ Read at a physiological conference in the Harvard Medical School, January 4, 1892.

² Reichert: Beobachtungen über die ersten Blutgefässen und deren Bildung, wie über die Bewegung des Blutes bei Fischembryonen. *Quoted from Feuerstack*. Die Entwicklung der rothen Blutkörperchen, Zeitschr. f. wissen. Zool. (Seibold and Kölleker), Bd. 35, page 136.

³ Quoted by O. Hertwig: Lehrbuch der Entwicklungsgeschichte, Jena, 1890, p. 149.

⁴ K. F. Wenckebach: Beiträge zur Entwicklungsgeschichte der Knochenfische. Archiv. f. mikr. Anat., Bd. 28, page 146. Die Herkunft der Blutkörperchen.

⁵ H. E. Ziegler: Die Entstehung des Blutes bei Knochenfischen. Bryozoen. V. Abth. Die Hinkunft der Blutkörperchen. Archiv. f. mikr. Anat., Bd. 30, p. 643. 187.

⁶ A. Kölleker: Entwicklungsgeschichte des Menschen und der höheren Thiere. Leipzig, 1861, p. 89.

⁷ O. Hertwig: Entwicklungsgeschichte, Jena, 1866, pp. 151-153.

⁸ Klein: Sitzungsberichte d. kais. Akad. d. Wissen. Bd. 63, 1871.

red corpuscles. From the outer side of the wall nucleated processes grow out and anastomose with similar processes from other cells. By the formation of vacuoles the processes become hollow, thus forming a capillary network filled with blood. The plasma is secreted by the wall-cells.⁹

Foster and Balfour¹⁰ teach that certain mesoblastic cells of the *area opaca* called "angioblasts" develop long protoplasmic processes which unite with one another, the nucleus of the original cell splitting into a number of nuclei which lie scattered in the undifferentiated protoplasm. At the nodes nuclei accumulate, and their surrounding protoplasm becomes infiltrated with haemoglobin. The processes then become hollow, some of the central nuclei and their undifferentiated protoplasm forming embryonic nucleated red corpuscles,¹¹ the peripheral ones forming the endothelial cells, the latter secreting the plasma. "The formation of the corpuscles does not proceed equally rapidly nor to the same extent in all parts of the blastoderm. By far the greater part are formed in the vascular area, but some arise in the pellucid area, especially in the hinder part." Foster and Balfour agree with Kölle and Reichert, who claim that corpuscles arise in the heart, in that they look upon this organ as a "gigantic nodal point."

His¹² declared that the first blood-vessels develop from the white-yolk or parablast, that they then spread from the *area opaca* and *pellucida* into the body of the embryo, being filled with a clear fluid before a single corpuscle has been formed. Attached at various places upon the inner surface of the walls of the vessels are groups of cells, the blood-islands. These next break away from their attachment and fall into the circulating fluid.

Rückert,¹³ Gensch,¹⁴ and others have shown that, in the Selachians, the merocytes or parablast nuclei found at the edge of the vascular area develop protoplasm about themselves, and then divide into groups of nucleated cells, thus forming the blood-islands, which then break up into blood-corpuscles. If this method of formation be true, blood is entodermic in origin.

The five theories just given easily reduce to two, the first three forming one well-defined theory, the last two, another. The solid cords of cells described by Kölle differ from the protoplasmic processes of Foster and Balfour in only one respect: the cells of the former have a distinct outline, the cells of the latter are undifferentiated, consisting in their entirety of a mass of protoplasm containing nuclei. From what is known of embryonic connective tissue it seems probable that the observations of Foster and Balfour are correct, embryonic connective tissue cells showing scarcely any traces of walls. Both Kölle's cord and Foster's and Balfour's protoplasmic process become hollow in much the same way. Klein's formation of vacuoles, as Foster and Balfour remark, is simply another way of explaining the formation of the central hollow. From all evidence, therefore, the Foster-Balfour theory is undoubtedly a true one.

⁹ Quoted from Foster and Balfour: Elements of Embryology.

¹⁰ Foster and Balfour: Elements of Embryology, 1st edition, London, 1874; 2d edition, London, 1883.

¹¹ As Foster and Balfour state the theory, the nuclei become the corpuscles. It has been shown, however, that the nuclei in question are surrounded by a very thin layer of protoplasm. Cf. C. S. Minot, Anat. Anz., Bd. v, 1890, pp. 601-604.

¹² Quoted from Foster and Balfour: Elements of Embryology.

¹³ M. Rückert: Quoted from O. Hertwig: Entwicklungsgeschichte,

p. 151.

¹⁴ Gensch: Die Blutbildung auf dem Dottersack bei Knochenfischen. Archiv. für mikr. Anat., Bd. xix, p. 144, 1881.

The theory of His and Rückert is in some cases probably true, particularly in the case of the cartilaginous fishes where there is a close agreement among all writers. Notwithstanding this fact, it needs more confirmation before it can become generally accepted.

All who have written upon the formation of embryonic corpuscles agree that they possess the power of dividing by indirect division, thus forming new corpuscles. We have, therefore, in the early embryo, three well-authenticated sources of embryonic nucleated red corpuscles, (1) from the mesenchymatous cells of the body according to Reichert and Kölle, (2) from the cells of the mesoblast in the *area opaca* and *pellucida* according to Foster and Balfour, and (3) from one another by indirect cell division. There may, in some cases, be a fourth source, the merocytes or parablast nuclei.

B. IN LATER FETAL LIFE.

(1) Nucleated Corpuscles.

In the later embryonic stages the corpuscles are of two sorts, nucleated and non-nucleated. As to place of origin it is commonly agreed that they arise in the following sequence: (1) From the liver, (2) from the spleen, (3) from the marrow. Kölle, Neumann, Pox and Salviovi, and Dr. Howell all give different theories as to the method of origin.

Kölle,¹⁵ as early as 1846, held that in later fetal life the liver was the first organ to form red blood-corpuscles; and in this he was right, but in his explanation of the method, probably wrong. He taught that certain white nucleated corpuscles found in the liver become impregnated with haemoglobin, thus forming red nucleated corpuscles. The latter then entered the embryonic circulation and at a later period lost their nuclei by absorption preceded by fragmentation, thus developing into non-nucleated red corpuscles from the nucleated form. Kölle thought that the liver, after a time, began to lose its haematopoietic function, this being assumed by the spleen.

The idea that the liver of the embryo is a source of corpuscles was not a new one when Kölle wrote. In 1840, Reichert had, by a lucky guess, referred to it the function of forming blood-corpuscles, and E. H. Weber had also written upon the subject. To Kölle, however, the credit is due of being the first to give any credible description of the process.

Neumann, who believed in the haematopoietic function of the spleen when he first wrote upon the origin of blood-corpuscles in 1858,¹⁶ afterwards concluded that there is no evidence that the spleen is concerned in the formation of the embryonic nucleated corpuscles,¹⁷ thus differing from all other writers upon the subject, but he believed very firmly in the blood-forming function of the liver. In his study of that organ he found two elements, which he thought form red nucleated corpuscles, certain large liver cells and certain free nuclei. He implies that the latter assume a film of constantly increasing protoplasm, and become red nucleated corpuscles by being impregnated with haemoglobin. He describes certain liver-cells in which a vacuole forms, constantly increasing in size. In these vacuolated cells "there arise directly in the proto-

¹⁵ A. Kölle: Ueber die Blutkörperchen eines menschlichen Embryo und die Entwicklung der rothen Blutkörperchen bei Säugetieren. Zeitschrift f. rationelle Medizin., Bd. iv, p. 112, 1846.

¹⁶ E. Neumann: Ueber die Bedeutung des Knochenmarkes für die Blutbildung. Archiv. für Kinderheilkunde., Bd. 2, pp. 6-102.

¹⁷ E. Neumann: Neue Beiträge zur Kenntnis der Blutbildung. Archiv. der Heilkunde., Bd. xv, pp. 481-478.

plasm or in a previously developed vacuole, new and peculiar nuclei by a free-formation process; and, by the appearance of a homogeneous yellow substance in the region about the nuclei, they give rise to the nucleated colored blood-corpuscles. These then undergo their further metamorphoses outside the mother-cell."¹⁸ It will be noticed that the nuclei of the blood-corpuscles do not arise from the nuclei of the liver-cells as Dr. Howell implies.¹⁹ In the formation of the vacuole it may be seen that this theory is very similar to Klein's.

Foa and Salvio²⁰ describe giant cells in the fetal liver, spleen, marrow and lymphatic ganglia, which they name "hematoblasts," and which split up into masses of smaller "hyaline cells" each one of which becomes charged with hemoglobin and becomes transformed into a red nucleated corpuscle. This theory will be mentioned again.

Dr. Howell²¹ believes that certain cells of the liver, lying between the hepatic cylinders, arrange themselves in solid cords which form corpuscles and vessel-walls in accordance with the solid-cord-formation theory already stated. He further found a case in which corpuscles seemed to be forming in the interior of a vein which was developing in the muscular substance of the posterior limb of an embryo of a kitten, and he therefore regards as a fourth source of embryonic nucleated red corpuscles, any region where developing blood-vessels are found. Howell believes firmly that there is but one method of blood-formation in the embryo, namely, by the solid-cord-formation theory. He says nothing about the hematopoietic function of the lymphatic system in the fetus.

(2) Non-nucleated Corpuscles.

There are three theories for the formation of the non-nucleated red corpuscles of later fetal life, of which the last two now to be given are well established; the first is very much disputed.

As long ago as 1846, Köllicker said that the nucleated embryonic red corpuscles become non-nucleated ones simply by the loss of the nuclei which disappeared by absorption preceded by fragmentation; and as late as 1890, Dr. Howell said that the nucleated corpuscles "under normal conditions lose their nuclei and become changed to the biconcave red corpuscles of the circulating blood, the transition, in the young embryo, taking place in the blood itself."

Unfortunately for the simplicity of this theory other investigators flatly contradict it, and Dr. Minot, who has tested its truth, finds no evidence in any of his numerous preparations that a nucleated embryonic corpuscle can become a non-nucleated one.²² He is the first to point out the very obvious fact that the two structures are entirely independent of each other, never being inter-transformable. Dr. Minot also says that the free nuclei, which Balfour states constitute the beginnings of the nucleated corpuscles, are not free nuclei, but are surrounded by a very thin layer of protoplasm. This stage soon gives place to a second, where the nucleus is more granular and the protoplasm increased in amount. A third stage follows, where the nucleus becomes smaller and stains

¹⁸ E. Neumann: *Archiv. d. Heilkunde*, Bd. xv, p. 610.

¹⁹ W. H. Howell: *The Life History of the Formed Elements of the Blood, especially the Red Blood-Corpuscles*. *Journal of Morphology*, vol. iv, p. 65.

²⁰ Foa and Salvio: *Sull'origine dei globuli rossi del sangue*, Arch. f. d. Path. med., 1886, vol. iv, p. 1.

²¹ W. H. Howell: *Op. cit.*, pp. 66-68.

²² C. S. Minot: *Zur Morphologie der Blutkörperchen*. *Anat. Anzeiger*, 1890, Bd. v, p. 601.

uniformly. These changes may be said to represent the phylogenetic changes in the genesis of the mammalian red blood-corpuscle, the second stage corresponding to that of Ichthyopida, and the third to that of Sauropsida.²³

Schäfer's²⁴ vaso-formative theory is firmly established, having been confirmed by many different observers, and by Kuborn²⁵ very recently. The process takes place in the vaso-formative cells discovered by Ranvier.²⁶ Unfortunately it is not a source of very many corpuscles, for it is a method lasting probably until only a few days after birth. A part of the protoplasm of connective tissue-cells, and also, according to Kuborn, of certain cells of the fetal liver, becomes impregnated with haemoglobin, condensing after a time in round globules about the volume of a corpuscle. The cells then elongate into anastomosing processes, which subsequently become hollow, containing a fluid in their interior. The hollow spaces of adjacent cells then coalesce, forming a system of capillaries; the fluid becomes the blood-plasma, and the protoplasmic globules become the non-nucleated corpuscles.

The liver, spleen and marrow are all supposed, with excellent reasons, to give rise to non-nucleated embryonic corpuscles by a method to be described in the third division of this paper.

II. FORMATION OF RED BLOOD-CORPUSCLES DURING EXTRA-UTERINE LIFE.

During extra-uterine life the corpuscles of the blood are all non-nucleated biconcave discs; they are not cells, but plastids. In some cases, as in the pig and the opossum, red nucleated corpuscles or true cells have been found under normal conditions, but generally their presence in the blood is due to some pathological disturbance.

The importance of the rapid formation of red corpuscles in adult life is shown by a simple computation. Suppose during a severe menstruation a loss of blood of 150 gms., or about 150 c. cm., the specific gravity of blood being 1,055. This loss is restored in twenty-eight or thirty days, so that in one day 5 c. cm., or 5,000 c. mm., of blood must be formed, or 208 c. mm. per hour and $3\frac{1}{4}$ c. mm. per minute. That is, 19,000,000 corpuscles are formed every minute and 300,000 every second of life for some years. This estimate does not include the replacement of the daily loss, which may, perhaps, represent another very large amount.

There have been many theories to account for the formation of corpuscles in adult life, but I shall give but five, of which only the last rests upon any sure foundation:

(1) As early as 1846 Wharton Jones,²⁷ influenced by a fancied resemblance in size and superficial appearance between the nuclei of the white corpuscles and the red corpuscles themselves, thought that the latter were to be regarded as simply the extruded nuclei of the former. There was no histological evidence to support this view, so that it never received any credence.

²³ Since non-nucleated red corpuscles are not cells, and since they are in no way related to embryonic nucleated red corpuscles, Dr. Minot proposes to call them "blood-plastids." The term is a very convenient one, but I believe the old terminology is too firmly established to be thus replaced.

²⁴ E. A. Schäfer: *Quain's Anatomy*, Tenth edition. London, 1891, vol. i, part II, p. 218.

²⁵ Kuborn: *Anat. Anzeiger*, Bd. v, 1890.

²⁶ Ranvier: *Arch. de Physiol. Norm. et Path.*, 1874, p. 429; 1875, p. 1.

²⁷ Wharton Jones: *On the Blood-Corpuscle Considered in its Different Phases of Development*. *Philosophical Transactions*, 1-46, p. 63.

(2) Previous to 1868, the date of Neumann's first paper on the origin of the blood, there was a general belief that red corpuscles were formed from the white by the loss of the nucleus and the acquisition of hemoglobin during circulation. Even Neumann and Bizzozero, following Köllecker and other preceding investigators, said in their first papers that it was from leucocytes that red corpuscles developed. Later they both retracted their assertions since they could not find any transitional forms, and to-day the time-honored theory is completely abandoned.

(3) Arndt,²⁹ who wrote much more recently, thought that in cases of strong anaemia portions of red corpuscles broke off and developed into new ones. Such a method of origin and growth seems directly opposed to the first principles of biology, and consequently the theory has never been accepted.

(4) Hayem,³⁰ who may be called the rediscoverer of the blood-plates which he named "haematoblasts," regarded them as young red globules incompletely developed, originating from the protoplasmic portion of the white, colorless corpuscles of the blood. Since "haematoblasts" are always found in increased numbers after direct loss of blood as in hemorrhages, or after indirect as in fevers, or in chronic anaemia, he thought he had a sufficient argument to show that they are young corpuscles in process of development. Hayem³¹ also finds another origin of his haematoblasts in the interior of the vaso-formative cells of Ranvier and Schäfer. Neumann³² declares that Hayem has described under the name of haematoblasts two entirely distinct structures, (1) colored haematoblasts which are merely broken-down red corpuscles, and (2) uncolored haematoblasts or true blood-plates. Hence Neumann concludes that it is not at all strange to find increased numbers of haematoblasts in diseased and anaemic persons, for it is in those persons that the most active destruction of red corpuscles takes place. Pouchet,³³ who has written a great deal of useless matter upon the subject, began by believing the haematoblasts of Hayem to be derived from leucocytes. His final view was that they arise in the plasma of the blood as the result of a process something like the formation of fibrin. It is needless to say that the theory never received any attention. Like Hayem, he thought that haematoblasts develop into corpuscles. This theory of Hayem's has received some support from Feuerstuck,³⁴ as he regards Hayem's haematoblasts as young forms of the white blood-corpuscles, which latter become impregnated with hemoglobin, thus forming red corpuscles. However, Hayem's theory may be said to-day to be almost completely abandoned.

(5) The theory which prevails at present is, without doubt, the true one. It is that red corpuscles develop from the so-called "erythroblasts" found normally in the marrow of the bones, in the fetal liver and rarely in the spleen and lymphatic ganglia of the adult. This theory is so extensive that it forms the third portion of the paper.

(To be continued.)

²⁹ R. Arndt: Untersuchungen an den rothen Blutkörperchen der Wirbeltiere, *Archiv. f. Path. Anat.* (Virchow), Bd. 53.

³⁰ G. Hayem's numerous papers are scattered widely through the *Comptes Rendus d. l. Soc. de Biol.* for the years 1877-1878, inclusive.

³¹ G. Hayem: *Compt. Rend. d. l. Soc. de Biol.*, vol. XXX, 1878, p.

192.

³² E. Neumann: Über Blutregeneration und Blutbildung. *Zeitschr. f. Klin. Med.*, Bd. 11, p. 411.

³³ Pouchet's articles can be found widely scattered through the *Compt. Rend. d. l. Soc. de Biol.* during the years 1877, 1878 and 1879.

³⁴ W. Feuerstuck: Die Entwicklung der rothen Blutkörperchen. *Zeitschr. f. wissen. Zool.* (Seibold and Kühnler), Bd. 38, p. 136.

THE RELIEF OF SALPINGITIS BY DILATATION AND DRAINAGE OF THE UTERUS.¹

BY CHARLES P. STRONG, M.D.,

Assistant Surgeon, Free Hospital for Women; Physician to Out-Patients, Massachusetts General Hospital; Assistant in Gynecology, Harvard Medical School.

THE treatment of salpingitis is divisible into two general classes: operative, that is, ablation of the tubes, and non-operative. Of the former I say nothing except that the larger the experience of the operator the less the percentage of cases will be found which demand this radical measure. Of the latter class we have still in daily practice the use of alternative applications and vaginal tamponades, as the common and routine measures. There will be found, however, many cases in which this antiphlogistic treatment is unsatisfactory, securing only temporary alleviation, or, from other necessities of circumstance being impracticable.

I wish to present for consideration an intermediate measure which does not embody the objectionable features of either of the two methods sketched above.

Considering for a moment the etiology of salpingitis, exclusive of malignant and tuberculous diseases, or direct violence, it is from the uterus the causative agent extends into the tubes, whether this be of a highly septic, or mildly irritant, nature. This is especially true of those cases where the marked characteristic is alternating periods of quiescence and activity of inflammatory symptoms. These cases are distinguished by the presence of more or less profuse uterine discharge, and examination will always reveal endometritis existing in some one of its several forms. Obviously, if this endometrial condition be restored to normal before the tubes become in themselves hopelessly diseased, and before the co-existing salpingitis has induced peritoneal adhesions, a return to healthful conditions may be expected.

The local treatment of endometritis by applications through the barely patent cervical canal, must always be both dangerous and unsatisfactory. This has been demonstrated too often, clinically, to require further comment. The treatment by drainage of the uterus following free dilatation, has much to commend it as a safe and conservative measure. That it is practised by but few is due, I think, not to non-success following its procedure, but rather to the glamour attendant upon a primarily successful laparotomy. I have selected four cases among the number in which I have performed it, to illustrate the various phases of cure, palliation and temporary improvement, and one case of acute endometritis and salpingitis, to show the freedom in which the measure may be employed in cases which we are prone to consider dangerous, if meddled with. The first three cases were operated upon sufficiently long ago to make the present report of value, the most recent one having been under observation considerably over a year. To avoid unnecessary confusion, I have selected only those cases with symptoms which would be materially affected by improvement in the salpingitis or endometritis; also, statements with regard to local conditions are based upon the results of examinations made with the patient anesthetized.

CASE I.—Mrs. K. This patient was referred to me for operation upon the cervix and perineum, for relief of the symptoms of backache, constant pain in ovarian

¹ Read before the Boston Society for Medical Improvement, January 11, 1892.

region, and repeated attacks of slight pelvic peritonitis, subsiding coincidently with the establishment of profuse purulent discharge from the vagina. The patient was a complete invalid, and had been bed-ridden most of the time.

October, 1889. I found, by examination, the left Fallopian tube enlarged quite uniformly to the size of an ordinary sausage; the right tube about one-half that size — numerous peritoneal adhesions which were not dense enough to prevent mobility of the tubes. Both ovaries apparently normal. The uterus the seat of a decidedly puriform endometritis, and in a hyperplastic condition.

I rapidly dilated the uterus, removing the thickened mucous membrane, which was very rich in its glandular elements: thoroughly disinfected the cavity, and packed with iodoform gauze. Drainage was continued one week.

November 22d. Examination showed that the right tube had diminished one-third in size. The left tube was practically normal. The uterine discharge was re-commencing. The operation and treatment was repeated.

May 6th. There had been great improvement in the symptoms of six months previous, and it was only at my request that the patient had reported. Upon the right there was still a distinctly enlarged tube. Operation repeated.

August, 1891. Twenty-two months had elapsed since the first operation, during which period there had been no local treatment. I found the right tube still slightly enlarged; the left normal. No evidence of endometritis. The uterus involuted to its proper size, and the cervical laceration not requiring operation. During the two years there had been no attack of peritoneal inflammation, and the symptoms of pelvic disturbance had been so alleviated that the patient had resumed all her household duties, and considered herself well. I, however, have classed this case at present as one of complete relief rather than cure, as the slightly enlarged tube may possibly, but not probably, at some future time give trouble.

CASE II. Mrs. F., married eighteen months, and confined to bed during the past six months by pain in the left side. Had for sometime previous to marriage a slight discharge from vagina, which is steadily increasing.

Examination, under ether, shows decided enlargement of left tube, possibly also of right. Ovaries normal.

December 11, 1889. Treatment as in Case I.

January 9th. One month later, more comfortable than at any time for a year. Only two attacks of pain since the operation, each one less than thirty minutes duration; can walk about fifteen minutes, and stand five minutes, without inducing more than a temporary feeling of pain in the side. Operation and treatment repeated. At this examination the enlargement of the tube could hardly be recognized as pathological.

January 5, 1892. One year from the last operation. Patient is perfectly well; is totally free from any pain or discomfort in the pelvis. Examination can detect no enlargement or tenderness of the tubes on either side. Walks several miles daily; no endometritis whatever. This case I consider a cure.

CASE III. Mrs. Mary K., nurse. Pain in both ovarian regions, steadily increasing for several years, despite replacement of a retroflexed and adherent ute-

rus. Chronic and profuse purulent endometrial discharge. Not able to work.

October 14, 1890. Examination shows a decided mass on left side — less upon right side; ovaries not felt. Implicated in the mass were the tubes, possibly the ovaries; certainly, there existed an abundance of strong peritoneal adhesions. Operation and treatment as in previous cases. Hypertrophied mucous membrane, and numerous mucous polypi removed. Immediately upon leaving the hospital this patient went to work in the violent ward of an insane hospital, needless to say, against advice. She re-entered the hospital three months later. I could not see that the local condition had been improved, and operated, removing the tubes and ovaries on both sides, which were so firmly imbedded in adhesions that they were torn away piecemeal. This case I consider a failure. I have reported it as illustrative of those cases in which this palliative treatment does not afford reasonable prospect of success. At the time of the operation, I did not regard it at all as a hopeful case, and so stated; but as a possibly conservative measure, I decided to try what might be accomplished.

CASE IV. Mrs. F. F. This case was one of acute salpingitis accompanying acute gonorrhoeal endometritis. There was great dilatation of the tubes. I operated three times in two weeks. At the conclusion of the attack both tubes remained enlarged. There was a re-lighting of the salpingitis after the interval of a year, when I repeated the operation. Three years ago, that is, five years after the first operation, there could be detected only some slight thickening about the broad ligaments, which was not at all tender, and to-day the patient is, so far as symptoms are indicative, perfectly well. I am aware that my course in operating upon this case in the height of an attack of acute gonorrhoeal salpingitis, exposes me to criticism: but it was necessary to do something as the patient's condition was becoming decidedly worse hourly. Laparotomy could not be considered; other palliative measures had been tried in vain. The course I adopted seemed the only one possible.

As to the methods of procedure. The aim should be to render the operation thoroughly aseptic, operating with the patient upon the side in the Sims' position, avoiding any downward traction of the uterus, by which the tubes might be put upon the stretch, and possibly a portion of their contents forced out upon the peritoneum; the cardinal point in the whole operation being to avoid lighting up fresh salpingitis or peritonitis by mechanical violence. Dilate slowly and steadily with steel forceps until the canal will readily admit a No. 36 sound. Thoroughly scrape away by sharp curette and currlette forceps the entire uterine mucous membrane, both cervical and fundal: especially endeavoring to free the opening at the uterine end of the tubes, it being at this point that they are frequently occluded by a slight hyperplastic enlargement. Disinfect the uterine cavity. Insert a twisted roll of iodoform gauze, about the size of a goose-quill, to the fundus. Along side of this roll insert others until the cervical canal is firmly filled. Leave the protruding ends within the vagina, and protect the vulva by an antiseptic pad. Change these rolls of gauze every two or three days for ten days, and keep the patient in bed a week.

The time of election for the operation is one week subsequent to the menstrual flow. Examine, under

ether, after a month has gone by, and if there is still evidence of salpingitis or endometritis, repeat the treatment. Should the tubes be enlarged when the uterine interior shows no evidence of disease either by mucopurulent discharge or hyperplasia, do not operate, but rely upon douches and alterative applications to the vaginal vault, to effect reduction in their size, which may, very possibly, be due to the results of the peritoneal inflammation, rather than to any increase in the contents of the tubes.

Selection of cases for operation. Success depends upon a proper appreciation of the pathological conditions which are to be relieved. Acute cases are best treated, for a time, at least, by palliative measures, or by radical operation. Chronic cases in which the tubes are tied down by many adhesions, and in which the symptoms are dependent upon immobility of the tubes, or of the uterus, do not afford a hopeful prospect of cure.

In all other forms I consider the operation not dangerous, and capable of accomplishing far more in the way of radical cure than any of the absolutely palliative measures, and, of course, free from the one great objection of a radical operation. The symptoms are indicative, in a measure, of what you may expect to find by examination. Pain, which is the constant and prominent symptom, is usually constantly present in those cases where peritoneal adhesions are thick and strong. These are not promising cases. The duration of the disease is also of importance. Those of more recent origin, other points being equal, yield more readily. Mobility of the tubes, and patency of the uterine end of the canal, are absolutely essential. It will be noticed that none of my cases have been cured by a single treatment. I think this is due to the practical difficulty of removing entirely the affected uterine mucous membrane. Whether a longer period of drainage would accomplish this, I am unable to say. I have made it a rule to limit my drainage to eight or ten days.

The suffering caused by the operation and the treatment is practically nil. An incidental point gained is that it tends very strongly to relieve menstrual pain, especially in those cases where the pain is due to mechanical obstruction to free menstrual discharge.

With regard to the dangers of the operation, there are none if properly planned, properly executed, and proper judgment employed in guiding the convalescence.

A REPORT OF THREE CASES OF CRANIOTOMY.¹

BY GEORGE HAYEN, M.D.

CÆSARIAN section, under the brilliant leadership of Stengnér, is so rapidly taking the place of craniotomy, in Germany, that I have thought the following cases sufficiently interesting to present to the Society this evening; and hope that the discussion will give us the sense of the members upon these two operations. These cases all occurred at the Boston Lying-in Hospital during the month of September.

M. H., entered on the 9th and gave the following history: Two years ago, was pregnant for the first time. The labor was very difficult, and she was only

delivered after many hours by instruments. The child was stillborn. As a result of this labor, she had a recto-vaginal fistula and a vesico-vaginal one. She was operated upon three times for these injuries. The vesico-vaginal fistula was closed; not so the recto-vaginal. She was told by the doctor who operated upon her to present herself at the hospital if she should ever be pregnant again, at the seventh month. This she failed to do. Examined when she entered, there was found to be a complete tear of the perineum through the sphincter. Just above the sphincter, there was a bridge of tissue across the anterior border of the anus. Above this was an opening which admitted two fingers into the rectum. There was, just below the cervico-vaginal junction, two dense bands of cicatricial tissue, running from the posterior to the anterior vaginal wall. These were supplemented by smaller bands running in various directions. The examining finger found some difficulty in passing this obstruction. Pelvic measurements were as follows: Crest, 10 $\frac{1}{2}$ inches; spines, 9 $\frac{1}{2}$ inches; external conjugate, 6 $\frac{1}{2}$ inches; internal diagonal conjugate, four inches.

I saw the patient for the first time at ten o'clock, A. M., and thinking that the bands of cicatricial tissue offered a very formidable barrier to delivery, asked Dr. Townsend to see the patient with me, which he kindly did, and agreed with me as regarded the serious aspect of the case. We thought that the rupture of the bands, which was inevitable, might open the peritoneal cavity. Dr. C. M. Green was asked to see the case, and at three o'clock we examined her under ether, and it was finally decided to try high forceps. The os was nearly dilated; the membranes were ruptured, and the cicatricial bands were dilated as much as possible with the hand. Forceps were applied with great difficulty, and with axis traction, the head was brought through the superior strait, and down to the bands, where it was firmly fixed. Firm and steady traction failed to advance it, and it was decided to do craniotomy. Even then, it was with great difficulty that the head and body were delivered. The patient made a good recovery.

Examined before discharge, there was a bi-lateral and deep tear of the cervix. The perineum and sphincter were gone, and the tear extended for about two and one-half inches up the anterior rectal wall.

The next case is that of M. A., colored. She had rickets, and did not walk until she was four years old. Pelvic examination gave the following results: The symphysis was very thick and projective in a rostrum; the sacrum was apparently wedged downward and forward between the ossa-innomina; the promontory was about on a level with the symphysis. Measurements were: Crests, 9 $\frac{1}{2}$; spines, 9 $\frac{1}{2}$; external conjugate, 6 $\frac{1}{2}$; diagonal conjugate, 4. The true conjugate was probably less than three inches. The hand introduced, found itself much crowded in all directions, and the closed fist could with difficulty be passed through the pelvic inlet.

I did not see the patient until evening. The pains had been very strong during the afternoon; but there had been no advance of the head. Ether was given, and with great difficulty, forceps and traction-rods were applied; but steady, firm traction failed to engage the head. Dr. Townsend was kind enough to be present, and repeated attempts by both of us resulted only in failure. Version was thought of; but, owing to the very thin

¹ Read before the Boston Society for Medical Improvement, January 11, 1892.

lower uterine segment, and the almost certain necessity of perforating the after-coming head, it was thought best to do craniotomy. Even then, delivery was very difficult, and the shape of the head when born left no doubt regarding the impossibility of delivering it through the natural channel in any other way. The patient left the hospital on the sixteenth day, well.

The third and last case differs from these, in so far as there was no obstacle to delivery in the pelvis or vagina; the whole trouble being with the uterus.

The patient was admitted on the 16th of September. She had been at the hospital two days before this, but was not supposed to be in labor. She said, however, that she had had pain off and on ever since she was first seen. Fifteen hours after entrance, the os was fully dilated, and the membranes ruptured. The head was high, position posterior. The pains were very severe at intervals of about five minutes.

No advance being made, I was sent for; ether given. The head was found movable above the superior strait; was rotated to an O. L. A., and after some difficulty, forceps and rods applied. Steady traction failed to produce any result. After several attempts, I sent for Dr. Townsend. Forceps with him resulted as they had with me, in failure; the head would not budge; the uterus being simply drawn down somewhat into the pelvis.

We now attempted version. There was a dense contraction ring which held the child firmly between the head and shoulders. The head was held exactly as it would be in a pillory.

We endeavored for hours to dilate this ring sufficiently to pass the hand through and by the head; but the most we could do, was with great difficulty to touch a knee with one finger. The feet were evidently high up in a contraction pocket. We then endeavored to shave the head back through this ring, but without success. A pulseless cord was found, and craniotomy resorted to. Powerful traction with the cranioclast merely served to pull away the skull piece by piece, until finally there was nothing left but the atlas. The hand could now be introduced, and the foot was finally brought down. Extraction was most difficult. With a blunt hook in the groin, and with traction upon the legs sufficient to break the bones, delivery was finally accomplished.

The first two of these cases, I think, could very properly have been treated by Cesarian section, and in the first one, it seemed to me at the time the operation of election, and does so still. If the tear had extended through the anterior vaginal wall, and so into the peritoneal cavity, a fatal result would have been probable. As it was, the tear went in the most favorable direction; namely, towards the rectum. It does, however, seem to me that the mother's chances were better with Cesarian section than with craniotomy. I have not seen her since she left the hospital; but, with the tear which she had, and with the history of having undergone several previous operations, much tissue having at each time been lost, I think that her outlook for a perineum and sphincter is very dubious.

In the second, we had to do with a pelvis through which a fair-sized child at term could not be born, and the question here is, what was the best operation for the mother? Staeger's results have been so brilliant, that it seems to me the time has come for us to think pretty seriously of his operation. Statistics are only reliable when the operation has been done by a good

operator, under the most thorough aseptic precautions, and before all other methods of delivery have failed. These statistics Dr. Reynolds and myself hope to present in another paper.

The third case was very peculiar. The woman had probably been in labor for forty-eight hours before entering the hospital. The uterus was in a state of tonic contraction, which ether and hours of labor failed to overcome. The cord had become pulseless, and craniotomy was certainly indicated. The body was, however, so firmly held by the uterus that traction merely served to pull the head to pieces without budging the trunk. Version, if possible, seemed the best thing to try. If we could bring a leg down, it gave us a wedge; and continuous traction for a length of time, would probably allow the body to pass the barrier. This proved true, but how difficult it was, can only be realized by those engaged in the case. Dr. Townsend succeeded in getting one leg, but not until he had brought down the other could any advance be made and even then not without the help of a blunt hook which I inserted in the groin.

I sincerely hope that these cases will provoke a discussion on this subject. If they do not do so, I shall have failed in my object in reporting them.

Clinical Department.

TWO CASES OF APPENDICITIS WITH ABSCESS, SUCCESSFULLY TREATED BY RECTAL PUNCTURE.¹

BY MAURICE H. RICHARDSON, M.D.

On Wednesday, November 18, 1891, I was called by Dr. Porter, of Auburndale, to see Mrs. H. S. P., aged about thirty. Dr. Porter gave me the following history:

"Last Friday night I first saw her. She was suffering with colic and indigestion. She was in pain and was out of her head. She vomited once or twice. I tried to move the bowels with enemas without success. The next morning the pulse was 125 and the temperature 101.5°. I gave her an anodyne. She had pain in different parts of the abdomen. On Sunday she began to complain of pain in the right iliac fossa. With the movements of the bowels we got various seeds in large quantities. Day before yesterday it looked like appendicitis. I began to give her small doses of calomel, which moved the bowels. On Monday night she passed about a drachm of various kinds of seeds. Yesterday she began to have tympanites. The pulse yesterday came down to 100, and the temperature to 99.6°. This morning she had two movements of the bowels. On examination of the abdomen I found that it was dull in the right flank, and by rectal examination there was a bunch which could be felt also by the vagina."

I found the patient lying in bed looking fairly well. Tongue was coated and white. There was no distension of the abdomen, though it was everywhere tympanitic, and nothing could be felt by external examination. By the vagina, the uterus seemed to be somewhat fixed, and there was a resistance to the right. I found a great prominence in the rectum behind the bladder, caused by a tumor, which was soft and evidently con-

¹ Read before Boston Society for Medical Improvement, January 11, 1892.

tained pus. The general condition of the patient was good. After careful consideration, I advised that the tumor be punctured and drained through the rectum.

On the following day Dr. Porter, under ether anesthesia, punctured the abscess through the rectum, and left in a drainage-tube. This was followed by perfect recovery in about three weeks. She has remained well ever since.

On Monday, December 14, 1891, I was called to see a young man, living in South Boston, by his physician, Dr. W. J. G. Fogg, from whom I obtained the following history :

"James W. B., aged twenty-six, brass-finisher, was perfectly well up to a week ago last Friday night. Then, about bedtime he began to feel uncomfortable, and complained to his wife of distress in the bowels, with a slight bellyache. He slept fairly well that night. Took some breakfast the next morning, and went to work. He had a good operation of the bowels. In the middle of that forenoon he was taken with severe cramp in the belly (indicating the place by putting his hand over the lower part of the abdomen, below the navel). He did not pay much attention to it at that time. The pain lasted all the forenoon, and he was not able to get back to work. On Saturday he stayed at home. He had great pain in the lower part of the abdomen on the right side, accompanied by vomiting. His tongue was dry and red. Respiration was difficult and increased in frequency. Pulse was 88 and temperature 101°. Had had a slight chill. That was on Sunday morning. On Monday his pulse went up to 130 and to 128 in the evening. The pain was somewhat controlled by Squibb's opium, fifteen drops every two or three hours. The belly was increased in size and somewhat tender. Respiration seemed difficult, and he vomited continually. The next day the pulse dropped to 98, and there was a little less tenderness. He was stupid and heavy from the opiate. Vomiting and nausea the same. The next day, Wednesday, pulse was 94 in the morning, and rose to 103 in the evening. General symptoms about the same. On Thursday the pulse was 105 in the morning and 100 in the evening. During this time we were giving him very small quantities of milk with carbonated water. He could not take any stimulant, although lately he has taken some. The next morning the pulse was 90, but otherwise he was about the same. On the 12th, that is, two days ago, his pulse was 98, and the treatment the same. There was vomiting all this time. Yesterday the pulse was 105 and in the evening 100. He was vomiting hard, retching and straining all day. There was a little coozing of fluid from the bowels. During this time he was passing gas at intervals. There was a little hesitancy in making water yesterday, which amounted to retention last night. He was catheterized this morning. The last twenty-four hours ending this morning, we have made no attempt to give any nourishment at all. He cannot retain it. During his whole sickness he has not taken a pint of milk in twenty-four hours, though milk has been the main-stay. The distention reached its maximum within the third day. There has been no discharge of pus at all. In regard to the pain he said that there has been no very severe pain since the third day. There has not been as much pain as one would expect to find, and there has been no chill. Respirations are much better now. They were nearly sixty a minute at times. The vomiting

has ceased since morning and he has had a large defecation."

On physical examination I found the young man's general appearance good. His face was rather flushed, pupils large, abdomen slightly distended. There was a dulness in the right iliac fossa. Bladder was full. Pulse 104. Tongue a little red. No special tenderness except on deep pressure in the right iliac fossa. Tympanitic everywhere except in this place, where it was a little dull. Nothing could be felt by the rectum.

In this case it seemed to me best to wait, because the symptoms had taken so decidedly favorable a turn. Everything went on well for a week, when vomiting returned with renewed violence, accompanied by increased pain, tenderness and distension. He was sent into the Massachusetts General Hospital on the evening of December 23d, and I saw him at about eleven o'clock that night. I found him vomiting constantly, with a high pulse and temperature, and in a very bad general condition. There was a large tumor occupying the lower part of the abdomen, filling the whole right and extending far into the left side. There was a large, tender mass pressing upon the rectum just back of the bladder. The patient's condition was so bad that anesthesia and laparotomy were out of the question. I therefore introduced a long rectal trocar of small diameter into the tumor. There was an immediate discharge of fetid pus. The canula was fastened into the mass and a large antiseptic dressing applied. During the night the vomiting ceased and about two quarts and a half of pus escaped through the canula. At the dressing in the afternoon the canula became displaced. From that time to the present the temperature has been normal and the physical signs have entirely disappeared. Nothing can now be felt by the rectum.²

I think there is no doubt that I was wrong in advising delay in this case. It was not evident at the time, however, and it is only in the light of subsequent events that an error of judgment becomes manifest.

Several times before I have been inclined to open abscesses pointing in the rectum by that channel. It seems to me that it is often more dangerous to open such abscesses by laparotomy and that the drainage is not so good. While as a general principle I believe it is far better to open from above, for obvious reasons, yet at times it seems to me that this procedure cannot be adopted. If the patient is in a very bad condition, the necessary shock of a laparotomy is often sufficient to cause a fatal termination. If the abscess has not become definitely adherent to the anterior abdominal wall, it is undoubtedly very dangerous to drain the cavity upwards.

In the first case quoted there was everywhere tympanic resonance, and there was no reason to suppose that the tumor had become adherent to the abdominal wall, nor was it possible by this route to drain the abscess except by going between the healthy intestines. In the second case the patient's condition was too serious to entertain for a moment the question of laparotomy, no matter how quickly or how skilfully performed. I recall several cases in which I have no doubt whatever that the patient died from the shock of an operation performed at this time.

In both the above cases pus was about to break into the rectum, and the operation hastened by a few hours the process of Nature. The chief objection to this

² He remains perfectly well at the present time, March 9, 1892.

method is the infection of the abscess cavity by the rectal contents. In these two cases nothing of the kind took place, and it is a well-known fact that abscesses break into the rectum without any subsequent trouble. We must bear in mind, however, that at times long-continued suppuration, general wasting, and death result from the breaking of an appendicular abscess or from the rupture of a pus-tube. Such cases, which are most disastrous and distressing, have led us, when possible, always to open large collections of pus in the pelvis by laparotomy, notably in cases of appendicitis and salpingitis. In the latter condition, with which I have had considerable experience, I have yet to see any ill results following vaginal puncture and drainage. It is obvious that while we have in rectal puncture the most dependent drainage, this method should be selected only in very exceptional cases. In vaginal drainage I think we have a less dangerous method, although in my experience it is very difficult to make the utero-vaginal canal aseptic. I believe in avoiding both as far as possible, but that occasionally we must resort to this procedure.

In a case very similar to the second, which I saw with Dr. Goss two years ago, and which I sent to the Massachusetts General Hospital, Dr. Warren drained by the supra-pubic method. The rectum was compressed by a large abscess situated directly behind the bladder. This case made a good recovery, although in the light of my recent experience I am quite convinced he would have done just as well by rectal drainage.

While there is no definite rule to be laid down in these cases, it seems to me that a certain number of them may be more safely drained in the manner described.

WOUND FROM WHIP-LASH SIMULATING BULLET-WOUND.

BY FRANCIS C. MARTIN, M.D., ROXBURY, MASS.

I HAVE had a case recently, which is certainly an amusing curiosity. A wagon-driver presented himself, with an enormously swollen under lip, and the following history: Late in the evening, he was driving through Dover Street, past a dense crowd of people. He struck his horse with the whip, and, at the same instant, there was a sharp report, and he felt a stinging pain in the chin. He found a wound in the lower part of the chin, and another smaller one inside the mouth at the base of the lower lip. The next morning the whole lip was very much swollen.

On passing a probe inwardly, from the outside of the face, I found a passage through into the mouth at the smaller wound. The probe rubbed against some hard substance *in transitu*. All the appearances indicated a severe bullet-wound. On making a free incision from the inside wound, I cut down on the foreign body, and with bullet forceps removed a black mass, about as large round as a lead pencil, and over half an inch long. I at once exclaimed, "You were shot from the crowd!" On dropping the object, however, from the forceps, into a basin of water, it went rather slowly to the bottom, without any "thud." I then examined it carefully, and found it was a piece of the whip itself.

I have often seen the power of the long snake-whips of the freighters in Montana, in taking out the skin in

minute pieces from any part of a mule, with unerring accuracy, but never heard of any such catastrophe as the one I have described.

Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

AN EPIDEMIC DERMATITIS AT PADDINGTON INFIRMARY AND NEIGHBORING INSTITUTIONS.¹

In view of the probability so often expressed, that many forms of cutaneous inflammation heretofore classed as eczema or dermatitis simply, are due to the action of a parasite or its products, the following epidemic of dermatitis is interesting and suggestive.

At the meeting of the Medical Society of London, held on November 30, 1891, Dr. Thomas Savill read a paper on "A Recent Epidemic at Paddington Infirmary." Between July 1st and October 23d, 163 of the 846 inmates of the infirmary were attacked by the disease, or twenty per cent. Only two cases occurred among the staff, the author himself and a housemaid. The disease is described as a universal dermatitis always resulting in a desquamation of the epidermis, attended by a certain amount of constitutional disturbance but no essential rise of temperature, running a course of about six weeks, and attacking males slightly more often than females. The disease sometimes began as a papular or papulo-erythematous eruption, sometimes as elevated macules, in rare instances in ring forms; in either case becoming confluent in a week's time, and presenting then the features of an acute, desquamating dermatitis. In a majority of the cases there were vesicles also, which caused much serous exudation when broken. The eruption started most frequently on the upper portion of the body, although the lower portions were affected first in a considerable number of instances. It seemed to spread by contiguity to the adjacent parts from those first affected. Burning and itching were constant features throughout the attack. Convalescence was slow, and 38 of the patients had relapses. Anorexia and prostration were the chief constitutional symptoms. In about a quarter of the cases there was vomiting, diarrhoea, or both. Temperature normal excepting occasionally at the height of the inflammation. The conjunctive were inflamed in all of the severe cases, and the hair and nails were often lost in the later stages of the disease. Albumen was found in the urine in fifty per cent. of the cases, but no serious renal disease was recorded. Some cases ended fatally [proportion not stated, nor whether these were the old and enfeebled.

—Rep.] chiefly from "the extreme weakness produced by the eruption," in other instances from collapse following the vomiting and diarrhoea. Some died comatose as in uremia. In several cases boils and carbuncles were seen scattered over the surface. The disease bore, on the whole, the most resemblance to an acute general eczema, differing from it, however, in the extent of the inflammation and thickening, in the profuseness of the exfoliation, and the definiteness of the course. Germicides externally and stimulants, afforded the most relief. With regard to the etiology, age was found to be a predisposing condition, the largest pro-

¹ *Lancet*, December 5, 1891.

portion affected being between 60 and 70 years old. The author considered that the clinical phenomena alone were almost enough to prove its contagious character, especially its definite course, the constitutional disturbance, the marked effect of germicides, and its epidemic character. Further pathological and bacteriological investigations were promised.

At the same session Mr. Lunn described a similar epidemic dermatitis as occurring at the Marylebone Infirmary from May 1891, when 193 persons were affected. He considered that 10 deaths could be directly attributed to it. No light could be shed on its etiology, after a most painstaking investigation. It occurred in wards that had been newly cleaned and isolation failed to secure exemption. Several attacks were noticed in some instances. Nothing unusual was detected in the several autopsies that were made. Mr. Lunn made the interesting statement that he noticed that if the first patch that appeared were painted with collodion, a further spread of the disease was avoided.

Dr. Richards of the Hanwell Institution, in the same district as the Paddington Infirmary, said that beginning with July 1st they had had 38 cases of the epidemic, or three per cent. of the inmates, the last case occurring in October. All of his patients recovered. He thought the eruption of a neurotic character and probably due to influenza, although he admitted in reply to a question, that there were no other manifestations of the influenza at the time, with the exception that in some of the cases there was a history of pain in the limbs, headache, etc.

Dr. Stephen Mackenzie said the outbreak, as far as his own experience was concerned, was quite unique. The features were those of an universal erythema with copious desquamation. He pointed out the similarity of these cases to the rare sporadic forms of dermatitis exfoliativa, which we have no grounds for considering contagious. In this outbreak he thought that there must be some special causative conditions in the environment, and as he had always regarded eczema as a purely local disease, he was ready to accept any bacterial theory upon sufficient grounds. He suggested that the clothing may have had some share in the spread of the epidemic.

Dr. Crocker was in doubt whether the disease was a constitutional one, like the exanthemata, or a local disease, the general symptoms being merely incidental. In a considerable number of cases he had noticed an enlargement of the glands, and this was not in proportion to the intensity of the dermatitis. The disease usually began with one patch, and became general, a feature often seen in pityriasis rosea. Against its being a general disease was the fact that it was endemic rather than epidemic.

DRYING LINIMENTS IN THE TREATMENT OF SKIN DISORDERS.

In February, 1891, Dr. George T. Elliott, of New York, published an article in the *Journal of Cutaneous and Genito-Urinary Diseases*, on "Bassorin Paste," a new base for dermatological preparations. The formula for this preparation was not disclosed, but it was stated to consist of Bassorin, a substance derived from Bassora gum tragacanth, and other sorts of gums, combined in proper proportions with water, glycerine and dextrine, so as to form a jelly-like mass that dries on exposure to the air. This was proposed as a substitute for the gelatine preparations of Pick and UBBE-

on the ground that the disadvantages of gelatine were obviated by the new preparation. Almost any drug may be incorporated with this base, which he names Bassorin Paste, and which he has found useful in a variety of cutaneous affections.

On May 8, 1891, Professor Pick, of Prague, read a paper on the use of drying liniments (*linimenta exsiccantia*)² in the treatment of skin diseases. These so-called liniments were designed for the same purpose as the Bassorin Paste of Elliott. The disadvantages of gelatine as a protective dressing for the skin are several. In the first place it has to be warmed, and it requires some little skill in order to hit the right moment for spreading the gelatine in a smooth layer upon the skin. It may be properly done by a skilled attendant, but it is difficult for the ordinary out-patient to effect it. More important still, the medicament is not brought into sufficiently close contact with the skin, on account of the rapidity with which the gelatine hardens. To obviate these difficulties Pick proposes tragant, a substance that fulfills the necessary conditions. Numerous experiments have convinced him that the proper consistency is obtained by the following formula:

Tragant	:	:	:	:	:	5 parts.
Glycerine	:	:	:	:	:	2 parts.
Ag. destill.	:	:	:	:	:	100 parts.

This is best prepared by warming, as in this way a completely antiseptic preparation is obtained, that will keep without the addition of antiseptics. He remarks that the drug of commerce often varies so much that it may be necessary to alter the proportions of the constituents. The "liniment" that is thus prepared can be used like gelatine in all cases where a protective covering is desired, it can be applied in a thin layer like an ordinary liniment or ointment, and can be completely removed by a simple washing. The first sensation experienced is a pleasant coolness, which is especially marked in erythematous and inflammatory conditions. An advantage over fats and plasters is that the greasy feeling is avoided, and that the clothing is not liable to be stained. This simple liniment may be used as a base for the exhibition of active substances. Drugs that are soluble in water, are added directly to the water that is necessary for the preparation of the liniment, while insoluble drugs are rubbed up with the mass. The oily substances, such as the tar preparations, ichthyol, styrax, Peruvian balsam, etc., do not change the essential properties of the liniment, except when used in very large amounts. Other insoluble substances, as chrysarobin, oxide of zinc, white and red precipitate of mercury, iodoform, salicylic acid, etc., give the liniment the consistency of a paste according to the amount used, without diminishing its drying and other properties. Two properties deserve especial emphasis: first, that the liniments do not become altered when used for a long time, and secondly that most substances when vigorously used locally, give rise to almost no unpleasant general results. Tar liniments of a strength of ten per cent. have been used over the whole body, without producing any, or very slight, symptoms of absorption. Pick declares that in a generalized eczema or psoriasis, the whole body may be treated by a five to ten per cent. tar liniment, — a procedure that would be dangerous when the drug is used in the form of an ointment, or an alcoholic or ethereal solution.

² Archiv. f. Derm. u. Syph., 1891, 4 Heft.

In recommending the liniments to the trial of physicians, Pick disclaims all wish to extol them to the exclusion of other methods of treatment, as many cases will be far more improved by our present method with ointments and plasters.

INFECTION FROM GLANDERS.

It has long been known that glanders or farcy may be transmitted from the horse to man, and many instances may be found scattered through the literature, more or less faithfully described. But little attempt has been made, however, to bring together the differential characteristics that separate glanders, especially in its more chronic forms, from affections that offer a clinical resemblance. In view of the great progress that has been made in the etiology of the disease by the discovery of a specific bacillus, it would be strange if our knowledge of its clinical aspects were not rapidly increased, and the careful studies recently made by several French observers illustrate once more the value of bacteriological experiment.

M.M. Hallopeau and Jeanselme^{*} report very fully a case of chronic glanders, which can be merely outlined here. The patient was a man of thirty years, who entered the St. Louis Hospital in April, 1889. He had been a wagoner for six years, and was accustomed to take care of his horses himself. While caring for a sick horse, that was subsequently killed, he was seized with febrile attacks accompanied by violent pains in the joints and in the head, and the nasal secretions became increased. Soon after he developed an inflammatory swelling on the crest of the left tibia, which was opened at the hospital of Chalon-sur-Saône, and was followed by a suppuration at this point which lasted for three years. Later, there appeared abscesses upon the arms and legs which opened spontaneously or were incised; but as the wounds refused to heal he came to Paris, and entered the St. Louis Hospital, where the lesions were finally healed after vigorous cauterization with the thermo-cautery. He then remained well for three years, when he presented himself again, complaining of severe headache, with some deafness and pain in the ears. Examination showed an ulceration upon the vault of the palate, which spread rapidly, soon involving the gum and the upper lip. At this time he was placed upon antiphilic treatment, which was stopped after six weeks, as no improvement could be detected. Soon afterward, the patient being troubled with a sort of chronic coryza, there was found to be an ulceration of the mucous membrane of the nostrils, with fistulas leading to the bones. Cauterization of the ulcers was then tried, with the result of partially healing the ulcerations upon the palate. The ulceration upon the lip is described as irregular at its edges, dentated in some places, circinate in others. The edges were everywhere sharply cut, and in some places prominently raised as in epithelioma, but they did not possess the hardness so characteristic of cancerous growths. The floor of the ulcers was extended by prolongations beneath the edges, and was constantly covered with a glistening exudation, in the midst of which appeared yellowish elevations, looking not unlike pustules. The pains in the head now became more intense and had a marked nocturnal character, preventing sleep, and the ulcerations upon the lip extended, until the whole upper lip had been destroyed. Abscesses then appeared upon the

arm and hand, which left obstinate, ulcerating surfaces. Suddenly, one day, the whole face became the seat of an inflammatory edema, the surface being covered with rounded pustules, which began at the angle of the right eye, where the lacrymal sac had been for some time in a state of inflammation. This acute attack, which was accompanied by a high temperature, subsided after the sloughing away of a large part of the right nostril, and was succeeded by an enormous tumefaction of the lower lip, which had hitherto been spared, and the patient died soon afterward in a state of general marasmus.

Three periods are to be noted in this case: (1) Symptoms of an infection, increase in the nasal secretions, and numerous abscesses. Then an intermission of three years. (2) A new series of abscesses, ulceration of the nasal fossae, the vault of the palate and the lips. (3) An attack of acute glanders, which ended fatally.

In cases of glanders analogous to the one described, the diagnosis is almost always suggested by the patient's occupation, as it almost never occurs except in those who are often brought into contact with horses. That cases of indirect infection may occur, however, is illustrated by that of Elliottson, where a washerwoman died of the disease after washing the linen of a coachman who had had the affection. The principal lesions are multiple abscesses and ulcerating neoplasms. Characteristic of these abscesses is their site; almost all are situated on the extremities. Some of them open and cicatrize rapidly, while others, and these are the most numerous, are chronic in their course and the resulting ulcer very difficult to heal, and inoculations made from these two varieties proved that the bacillus of glanders, when it has its seat in the human tissues, has a very variable period of existence. The fluid from the abscesses may sometimes have a characteristic aspect; it has an oily, gummosus appearance, is often streaked with dark colored blood and is called by veterinarians "huile de farcin." The acute inflammatory edema which ushered in the last stage of the disease, the authors regard not as an erysipelas, but as an attack of acute glanders, such as often terminates a chronic farcy.

The experimental studies in this case proved conclusively the nature of the affection, as the bacillus of glanders was obtained in pure cultures, and the disease inoculated upon animals.

Cauterization with the thermo-cautery was the only treatment that proved in any way effective. By this means the external manifestations were delayed for a period of three years, and in the same way the ulcer of the palate was healed.

In the same journal is published a communication to the French Society of Dermatology, by Besnier, on the same subject, in which another case of glanders is described where a severe ulceration of the face developed in the course of a chronic farcy. The patient was a man, twenty-five years of age, who had been a groom, wagoner and driver. He entered the St. Louis Hospital in May, 1890, presenting in the centre of the face lesions that he said had existed for only five months, and which gave the impression at first glance, of a severe syphilis. He had contracted the disease four or five years before its fatal termination. The first symptoms were of a pulmonary character. For more than a year he suffered from a severe and incessant cough, with night-sweats, abundant expectoration, loss of appetite, of flesh and of strength.

^{*} Annales de Derm. et de Syph., tome II, No. 4.

Eighteen months or two years later all these symptoms had disappeared. There then appeared an abscess of the left forearm, together with lesions in the nasal cavities. Upon entering the hospital the centre of the face was the seat of an uninterrupted series of infiltrations, ulcerations and losses of substance, which had destroyed a large part of the nose and of the upper lip, exposing the gum. The vault of the palate was totally covered with ulceration. Wherever an active lesion was seen it was situated upon a red infiltrated base. Upon this developed the elementary lesion of glanders, the "bouton farcineux," a small papule, which rapidly softened with the formation of small yellow centres, which emitted an abundant puriform liquid. The open surface thus formed increased rapidly with irregularly indented edges, but in a few days this mode of progression ceased, and the ulceration became undermined with infiltrated edges. It was by the coalescence of several of these ulcers that the large losses of substance were formed. Considered separately, each of the proliferations has but a limited duration, and a process of cicatrization goes on at the periphery. In this way there is formed in the midst of the vast ulcerations a characteristic mass of nodules and projections of every size and shape, that gives the whole an irregularly granular and wormeaten appearance. Later, the process at first rapid, becomes slow, the lesions always secreting a quantity of yellowish pus which fills the depressions and never ceases, so long as the lesion is active. The patient had not at any time symptoms of nasal trouble; no coryza nor exudation. Antiphylactic treatment proved futile. Iodiform and camphorphilic naphthol were the most useful means found for checking the suppuration and limiting the formation of the farcy nodules. At the time of the patient's entrance, ten months before his death, a nephritis with paroxysmal oliguria was present, and he finally died from uremia. The diagnosis was confirmed by experiment, as positive results were obtained by culture and by inoculation.

Babes, of Bucharest, publishes in the *Archives de Médecine Expérimentale et d'Anatomie Pathologique*, No. 5, 1891, some observations on glanders from which we extract some of the more interesting results. After speaking of the morphology and methods of culture of the bacillus, he refers to its penetration into the sound skin and mucous membranes. In one case he discovered the existence of small reddish papules which the patient declared to be the starting points of the ulcers, and in fact the development of the ulcers from these papules could be traced microscopically. Examination of these papules showed that many of the hair follicles were hypertrophied and surrounded by a cellular infiltration, and their centre was filled with enormous masses of the bacillus of glanders, well stained by the appropriate methods. In the parts of the skin surrounding the follicle, a few bacilli were found, chiefly in the lymph channels. From this it is concluded that the specific bacillus can gain entrance to the hair follicles, there multiply and produce a dilatation of the follicle, and finally pass through the epithelial lining membranes into the adjacent tissue. In order to determine if the bacillus may gain entrance through the sound skin in animals also, Babes mixed the bacilli with vaseline, lard or lanoline, and rubbed this mixture thoroughly for two to three minutes into the skin of guinea-pigs. Glau-

ders was produced in one of three cases. Cultures of different ages, or obtained from different cases, showed very variable degrees of development. Rabbits inoculated in the ear with the platinum wire from a fresh culture, often die of glanders, without tubercles or abscesses, but with lungs congested and bacilli in the blood. Glanders in man is comparatively frequent in Roumania, so that Babes was enabled to study several cases, of which four are described. It was not always easy to isolate the bacillus of glanders, on account of the frequent association of other forms of bacteria. From a study of the chemistry of the morbid products the following conclusions are reached: (1) The bacillus of glanders produces chemical substances of a toxic nature. (2) These substances were obtained by precipitation with alcohol, or by dialyzation of the cultures in bouillon or potatoes, filtration and dissolving in water or glycerine. (3) These substances are of a brown color, and analogous to those obtained from cultures of tuberculosis and diphtheria. They possess a pyretic and toxic action stronger than that of tuberculin. The active substance is called "mälléine." (4) Neither the part that is soluble in alcohol, nor the chloroform or ether extract of the alcoholic precipitate, has any appreciable action upon the organism of animals. (5) The active product produces after injection a transient fever, often convulsions, and in large doses nephritis and general marasmus; it never produces glanders. (6) It is much more violent in action upon animals affected with glanders than upon healthy animals. By beginning with small doses, and awaiting the disappearance of the fever, a preventive vaccination may be obtained, and the disease cured, although it is difficult to determine the proper dose. The author does not wish to draw absolute conclusions from these observations, but expresses the hope that a further study of these substances will suggest a rational method of treatment for this terrible disease.

(To be continued.)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

ANNUAL Meeting, Monday, January 11, 1892, the President, DR. FREDERICK I. KNIGHT in the chair. DR. C. P. STRONG read a paper on

THE RELIEF OF SALPINGITIS BY DRAINAGE OF THE UTERUS.¹

DR. F. H. DAVENPORT: I have been very much interested in this subject because, as Dr. Strong has said, although there are many cases which can be successfully and satisfactorily treated by the ordinary methods of tampons and douches and applications, yet there are a certain number of cases where these measures are insufficient, and yet in which it is inadvisable to operate. I have never tried this method Dr. Strong has described, but it seems to me to possess many advantages, so that I certainly shall try it in suitable cases.

I think the question of the character of the discharge

¹ See page 258 of the Journal.

is an important one. In cases of thickening of the tube it does not always follow that the discharge that comes from the uterus comes from the tube itself, and I think I have seen cases where there was an intermittent character to the discharge where the discharge came from the uterus alone. In those cases, of course, it is more apt to be connected with menstruation, either present just before or just following the flow, and where the discharge comes from the tube the presence of pain, as a rule, is a distinguishing point; still that does not always follow. I have seen cases of uterine colic lasting a day or two set up by a slight exacerbation of the trouble in the endometrium alone. Still, where the attacks of pain are evidently due to exacerbation of the trouble in the tubes, and such pain is accompanied or followed or relieved by a flow of pus or mucopurulent discharge with enlargement of the tube, it is safe to infer that the tube is at fault. I would like to ask Dr. Strong whether he would not avoid in these chronic cases the stage of acute exacerbation for his operation. He spoke of operating in one acute case. I did not understand whether during the acute stage or immediately following an acute attack.

DR. STRONG: That was the first case I ever did. It was an acute gonorrhoeal case. The tubes were filling up, and it had been a question of laparotomy, which the family were not willing to consider; so as I felt the tubes might burst and let pus into the peritoneal cavity, I operated in that case with a view to drain the tube. The first operation was attended with so much relief that when the temperature rose again I operated again, and again the third time. I should do that if it came to a question of laparotomy quite fearlessly.

DR. G. H. WASHBURN: I have used this method in one case of this kind with very satisfactory results. It was a case where there was an evident patency of the uterine end of the tube, and the difficulty was that the opening was apparently not free enough, and the endometritis that was present was tending to close up the tube. The pain was increasing, and there was a question of a coming laparotomy if things were allowed to go on. The usual methods of different applications were tried without relief, and then I dilated thoroughly, following out the course Dr. Strong has described; I had to use the dilatation and curetting only once, keeping the canal open, however, for quite a while afterwards, longer than the ten days. I kept the iodoform gauze pencils in the uterus for three weeks, changing them every second day, and brought about perfectly free drainage of the tubes. This relieved the symptoms, and the patient has been very comfortable in that respect. That was about two and a half years ago, and the patient has not been troubled with the symptoms since.

DR. DAVENPORT asked whether at the time of the operation any extra paralyzing of the uterine fibres is necessary by an extra amount of dilatation, or merely enough dilatation is employed to just admit the sound?

DR. STRONG: I simply carry it up to that. When I get it up to No. 36 sound I think that is far enough. I dilate with Schultze's dilator. Beyond No. 36 I think there is a chance of tearing it into the broad ligament.

Incidentally, one of these cases I reported to-night was sterile and had suffered from dysmenorrhœa all her life. That is another point in favor of the operation, I think.

DR. G. HAVEN read a paper entitled

THREE CASES OF CRANIOTOMY, DONE FOR DIFFERENT REASONS, DURING THE MONTH OF SEPTEMBER, AT THE BOSTON LYING-IN HOSPITAL.²

DR. C. M. GREEN: I saw one of these cases, the first one reported, and found it of interest from the fact that we do not often see in these days such marked cicatricial stenosis of the vagina. The interesting feature in the case was largely one of deciding what had better be done under the circumstances, and I think there was no difference of opinion among the three gentlemen who saw the case that it would have been a proper and legitimate operation, from a scientific point of view, to have done Saenger's Cesarean section. We ought to have saved the child and mother too by that operation. To be sure the mother got well as it was, with a very serious tear, but, of course, the child was lost. The reason which largely controlled the decision in the consultation was a prudential one. It happened at the time the hospital was in a condition of confusion, owing to rebuilding. We were not in a condition to place the patient in such a way that she would have a fair chance after opening the abdomen, and did not feel it was quite right to the patient or to the reputation of the hospital under the existing circumstances to undertake that operation. The statistics after craniotomy on the mother's part, in good hands and with aseptic work, are entirely satisfactory. No mother ought to die after craniotomy in careful hands. There was the question of fetal life. The child was living, and it would have been more scientific obstetrics if the abdomen had been opened and Cesarean section performed.

The second case was very interesting. Operation was called for by the pelvic contraction. It seems to me that that would have been an entirely suitable case for Cesarean section had the child been living. In fact, Boston will fall behind other cities if she does not recognize the fact that under modern surgical methods and aseptic treatment the Cesarean operation is an entirely justifiable one in the hands of those who have had surgical training, and know how to do the operation.

The third case was one of unusual difficulty. Whether or not that case would have been as favorable for Cesarean section I am less certain. The condition of the uterus was very peculiar. We know that the child is often grasped by contraction rings, and the ring causes a certain amount of resistance to the extraction of the child, but it is very certain that the contraction ring should not still remain as tightly contracted as this after prolonged etherization. These rings relax in my experience. Whether or not in that third case after Cesarean section the mother would have had a good chance is questionable. With the uterus in that condition I do not feel sure that the operator would have been able to suture the uterus and obtain a good result.

DR. C. W. TOWNSEND: The record of three craniotomies within such a short time is certainly appalling, but the necessity of either that operation or Cesarean section was forced upon me in all these cases which I had the fortune to see with Dr. Haven.

In the first case, Cesarean section would, as is seemed to me at the time, be the only method of saving the child; for to drag the intact head by main

² See page 260 of the Journal.

force through the bands of cicatricial tissue in the vagina would have surely resulted in serious, if not fatal, injury to the mother.

The third case is interesting and instructive in teaching us to be on the lookout for the exhausted and irritated state of the uterus which leads to the formidable hour-glass and contraction ring. In this case there was also a thinned lower segment caused by retraction, the line between this segment and the thickened upper part forming the so-called ring of Bandl or the retraction ring. This thinning of the lower segment added, of course, to the danger and required us to use great care in manipulation for fear of rupture. It might be added that the three cases all made normal recoveries, and it seems to me that with proper antiseptic precautions such results should always be obtained in craniotomies. Statistics recently published have, I believe, borne out this statement, a great contrast to the sepsis so generally expected after craniotomy in former times. It seems to me that the remarks of Dr. Haven on Cesarean section are very timely.

Dr. GREEN: I should like the opinion of some of the gentlemen present as to whether we have the right to do a Cesarean section without the formal consent of the husband. In Dr. Haven's first case the husband was not accessible. Provided three good men think the prognosis is good for the mother, with a reasonable probability of saving the child, would they be justified in performing the operation without the consent of the husband or the next in authority? It is a question we ought to be able to decide, because there generally is not time to wait. If we would succeed with a Cesarean operation it must be done early, and not after forceps and version have been tried.

Dr. MINOT: My own opinion is that if after a formal consultation of the physicians attached to the hospital it was decided that the patient's interest required imperatively any operation, in the event of inability to obtain the consent of the husband or nearest friend, it would be their duty to operate at once.

Dr. WARREN: As a rule, I have been in the habit of waiting for some relative in case of an operation at the hospital, but under circumstances somewhat different from those Dr. Green has mentioned. When a patient is brought in in an intoxicated condition or somewhat confused from an accident and is unable to give an intelligent answer, as a rule, I have endeavored to postpone operating until some formal consent of the relatives has been obtained. I can conceive of a case that would come to me as a hospital surgeon where the question of performing laparotomy for intestinal obstruction might arise, and delay be productive of fatal result, where I should feel authorized to operate. I think the cases are quite exceptional, however. I should try very hard in all cases to obtain the consent of some relative or do the operation with a thorough understanding on the part of the patient.

Dr. GREEN asked whether or not the institution would be liable for suit if its officers were to perform a serious operation like opening the abdomen for any purpose without the formal consent of somebody.

Dr. M. H. RICHARDSON: Last week a surgeon of one of the smaller hospitals near Boston was brought into court to answer to a charge of malpractice. He had amputated a leg it was alleged, in the first place, without the consent of the father; in the second place he had done it unsuccessfully. The case was an emer-

gency case. The evidence showed that the father was in the room at the time of the operation. It was alleged that the operation was done too soon, that no operation should be performed under six hours. The jury brought in a verdict acquitting the physician. I have seen a great many malpractice suits tried. I do not believe that a verdict can be brought against a physician or a hospital for a Cesarean section, if the physician thought it was necessary, provided the patient was unconscious and no friend was present. I believe it is pretty clear that in a general hospital or lying-in hospital that, if no friends are present at the time, physicians are expected to do the best they can for the patient. I don't believe in this special case myself that a physician would be justified in doing an operation which is not acknowledged by all to be the best thing to do, without consent. I think it is a very important question, and one we have to decide for ourselves in all hospitals. I believe the important point is go ahead and do the best you can for the patient without any idea of suit. I have seen at least two cases in which the surgeons had an idea they might be sued in which that very act was the most potent thing used against them.

Dr. STRONG: I don't see why the question proposed by Dr. Green does not apply to what they did do. They operated and used their best judgment. They did craniotomy.

Dr. HAVEN: I agree most fully with Dr. Green regarding the third case. It was certainly not one where Cesarean section would have been thought of, everything but the uterus being in a normal condition. The contraction ring was, however, so firm of work as to produce any effect upon it. We worked from ten o'clock P. M. until dawn, and delivered then only after the head had been completely pulled to pieces by the cranioclast.

Dr. H. F. VICKERY: The English say that chloroform will relax more completely than ether. I wonder whether chloroform would relax such a ring?

Dr. HAVEN: I have never used chloroform.

TUMOR OF THE FEMUR.

Dr. WARREN: I have here a large tumor of the lower part of the femur of about nine years' standing. The patient was a male, thirty-nine years of age, in general good health. After some blow or strain he felt a swelling above the knee, and the femur grew gradually until it attained an enormous size, which it had when he came to the hospital for operation last Saturday. It was one of those oval-shaped tumors springing from the shaft of the femur and running up the shaft. This one was peculiar from its very dense structure, a bone-like hardness. On amputation it proved to be in the centre a soft sarcoma, and the hard part appeared to Dr. Whitney to be chiefly a calcification rather than ossification of the part. The wound healed throughout by first intention.

Dr. M. H. RICHARDSON reported

TWO CASES OF APPENDICITIS WITH ABSCESS TREATED BY RECTAL PUNCTURE.²

Dr. WARREN: I saw the second case at the hospital and the convalescence was all that could be desired. It seems to me a desirable method of dealing with certain types of these cases. The fashion now is to make an incision through the abdominal wall,

² See page 263 of the Journal.

but it is well to remember, too, abdominal abscesses can be treated in other ways.

DR. STRONG: I should like to ask whether in the first case he could detect any sign of pus by vaginal examination.

DR. RICHARDSON: No. It was impossible. There was increased resistance in the right.

DR. STRONG: In quite a number of cases that I have seen in the various hospital clinics of long standing suppuration with a sinus leading into the rectum, it has been impossible to get good drainage. I believe thoroughly where you are sure that the abscess cavity is a single one and you can reach it through the vagina, in aspirating and draining that way rather than do a laparotomy, but with regard to opening into the rectum, I think the point is one to be very seriously considered for the reason I stated. I have seen very many very long suppurative cases, the patient wasting away and dying. My remarks relate rather to the remarks at the end of the paper than to the cases.

DR. RICHARDSON: I have distinctly limited this operation to certain conditions. I have recognized in the paper the disadvantages of the procedure. I do not advocate it except in very rare conditions. I do not think that any surgeon of any judgment whatever would have subjected the second case to any other operation. I am positive as I can be that the anesthesia of a laparotomy would have killed him. I have seen them die time and again after that operation. I do not mean to say that rectal drainage is not dangerous, and that we do not have these disastrous consequences. I do not believe that rectal drainage is as dangerous as laparotomy where the patient is moribund.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON PEDIATRICS.

MEETING of February 11, 1892. WM. P. NORTHrup, M.D., Chairman; FLOYD M. CRANDALL, M.D., Secretary.

A CASE OF SPINA BIFIDA.

was presented by DR. A. JACOBI.

The patient was two months of age, and the tumor, which was present at birth, was growing rapidly. The wall was becoming thin over the central portion, and without operation would soon burst and the child die. There was also talipes valgus, and the sutures and fontanelles were very large.

A demonstration was given by DR. M. PUTNAM JACOBI to prove the fact that when the lung is collapsed, percussion yields tympanic resonance, but when extremely inflated, exaggerated pulmonary resonance.

DISCUSSION ON DIPHTHERIA.

DR. JOSEPH E. WINTERS read a paper entitled
**THE BEST APPARATUS AND BEST DISINFECTANT FOR
USE IN MOUTH AND NOSE.**

The author assumed that the disease is caused by the Klebs-Loeffler bacillus: that it is primarily a local disease. The microbes elaborating in the membrane exude a poison which is absorbed and carried into the circulation, the germ itself not being found in the blood or tissue. A point of vast importance in treatment is the fact that the specific germ on a perfectly healthy membrane does not provoke diphtheria. The primary

indication, then, is not only to cleanse and disinfect the parts but to destroy the germs *in situ*.

The activity of the Klebs-Loeffler bacillus is impaired by even weak solutions of carbolic or boracic acids. The practical deduction from this is that at the outset we should attack the exudate or culture soil in order to prevent the microbial products from producing constitutional results. It is never safe, however, to employ means that will irritate the surrounding parts, for fresh points of infection are thus made. The only means of successfully disinfecting the throat and preventing sepsis is by irrigation.

For this purpose the child should be placed on the side of the crib and a rubber sheet arranged to catch the drippings, but he should under no circumstances be lifted from the horizontal position. If a Davidson syringe be used the cleansing will be more complete, and will meet with less resistance than with any other apparatus. The irrigating should be done through the nostrils, for they cannot be tightly closed like the mouth, and with the first flow of fluid from the nose into the throat the mouth is opened and everything is discharged through the nostrils and mouth. It is occasionally necessary to syringe through the mouth. In this case the tip should be removed and the tube passed along the inner side of the cheek behind the last molar to the pharynx. In ordinary cases irrigation every two hours is sufficient, in severe cases it must be practised every hour, day and night.

For this irrigation nothing has proved as satisfactory as a ten per cent. solution of peroxide of hydrogen or a saturated solution of boracic acid. The passages must be thoroughly cleansed at each washing, and one-half to one pint of solution will be required.

In the local treatment of diphtheria is included medicated steam from a croup kettle, and the inhalation of sulphurous-acid gas through the burning of sulphur candles. For medicating the water in the croup kettle, add to one pint of water one ounce of spirits of turpentine and two drachms of oil of eucalyptus. In the use of the kettle plenty of rubber tubing is necessary, and a gas stove is the best means of generating the heat.

DR. H. D. CHAPIN read a paper on

QUARANTINE AND DISINFECTION IN LIMITED APARTMENTS.

The management of diphtheria in tenement-houses formed the chief subject of consideration. The furniture should be removed as far as possible and the child placed on a cheap cot instead of a bed or sofa. The mother, if she must also attend the rest of the family, should wear a wrapper, which can be removed upon leaving the room. The area of contagion, when ventilation is good, is small, probably but a few feet. If the germs can all be destroyed *in situ*, there will be no contagion. Old cloth or pieces of cheese cloth should be used about the patient and burned as soon as soiled. All articles of bedding should be shaken on the roof and exposed for a considerable time to sunlight and air, the two most powerful antiseptics at our command. The walls should be washed down with a sublimate solution, 1 to 1000, and the same should be used in sinks and closets. Papered walls may be cleaned with stale bread crumbs. The burning of sulphur, while it may not be of great efficacy, is undoubtedly of some value. It leads to thorough subsequent ventilation at least. The throat and nasal passages of the other children of

the family should be frequently sprayed with mild antiseptic solutions.

DR. L. ENMETT HOLT read a paper upon,

FEEDING IN DIPHTHERIA: METHODS OF FORCED FEEDING.

In a disease like diphtheria, where the principal cause of death is asthenia or exhaustion, no question can exceed in importance that of nutrition and stimulation. The most common error in this direction is over-feeding and over-stimulation during the first few days. It too often happens that when the critical period arrives the over-burdened stomach refuses to do its work. The subject may be considered under these three heads: (1) Character of food and stimulants, (2) frequency of administration, (3) forced feeding.

As to character of food little need be said except to condemn two articles frequently allowed, ice-cream and jellies, which interfere with taking more valuable food. The main reliance must be upon milk diluted according to the age of the child. Next to milk, beef broth, mutton broth, expressed beef juice, soft boiled eggs, milk toast, wine whey, oat meal or barley gruel. Junket with a little wine added, and kumyss, when the child will take it, are valuable additions to the list.

In regard to the stimulants, brandy is best, but we must be guided by the child's whims and give what he will take best.

Experiments with stomach washing show that the stomach is rarely empty sooner than two hours after a meal. It is a safe rule never to give food requiring digestion oftener than this. Stimulants and pre-digested food may be allowed at shorter intervals. The quantity of food given should be somewhat less than the child would take in health. It is best not to begin stimulants until they are indicated by the pulse or prostration, but they should then be pushed until the desired effect is produced, the only limit, in many cases, being the tolerance of the stomach. Unlike food, they should be given in frequently repeated doses. A careful record of the exact amount of food taken and retained should always be kept that we may know where we stand.

It sometimes happens that the child absolutely refuses all nourishment and stimulants. Coaxing, threats and commands are alike futile. Efforts to compel the child to take milk in teaspoonful doses results in the wasting of an immense amount of strength while little or nothing is accomplished. It is at this juncture that the question of forced feeding arises. Rectal feeding in young children, owing to irritability of the sphincter, is almost impossible. Much more efficacious, and with far less disturbance to the patient, is forced feeding by the mouth or nose. The difficulties are surprisingly small. The ordinary apparatus for stomach washing is all that is required, the method of procedure being the same as in that process. Unless there is much resistance the mouth is to be chosen. Completely peptonized milk is to be preferred. The operation should be repeated once in four hours. In this way a proper amount of nutrient can be introduced with far less worry and resistance than by the spoon method.

The operation was demonstrated upon a child of ten months, a sufficient amount of milk being introduced in about ten seconds.

DR. A. JACOBI spoke upon the subject of CONSTITUTIONAL TREATMENT IN DIPHTHERIA.

He has been convinced of the value of bichloride of mercury in all forms of the disease, especially the laryngeal. He gives it in large doses; a child of six months will take a quarter of a grain a day with no untoward symptoms. Diarrhoea is rare, and is quickly checked by a few drops of paregoric. Stimulants should not be delayed until signs of heart failure appear, for when that condition has once developed the patient is almost certainly lost. Very large doses are sometimes required, and they should be increased until an effect is produced. The doses of digitalis, camphor and alcohol, as stated in the text-books are no guide whatever. If rejected by the stomach, they should be given hypodermically. One part of camphor dissolved in four parts of sweet almond oil may be given hypodermically with but slight local disturbance.

DR. AUGUST SEIBERT demonstrated his method of **SUBMENBRANEOUS ANTISEPTIC INJECTIONS.**

If the Klebs-Loeffler bacillus generates a poison within and underneath the pseudo-membrane, that is the place to attack it. He has therefore devised an implement consisting of a number of hypodermic points set closely together on a small disc by which an antiseptic may be injected beneath the membrane. As an antiseptic, he employs very strong chlorine water. The method has now been in use eighteen months with strikingly surprising results. It is designed to supplement, not to displace, other local treatment, the injections being made but once a day, one or two, as a rule, being sufficient.

DR. VINEBERG approved of sulphurous-acid gas as it gives marked relief to the patient.

DR. J. LEWIS SMITH used a stronger solution of peroxide of hydrogen than that proposed by Dr. Winters. Stronger solutions can be used in the throat than in the nose.

DR. STOWELL thought that the strength of the solution must be graded to suit the case. Peroxide of hydrogen if too strong will cause irritation.

DR. HOLT said that in a personal trial he had found a ten per cent. solution too strong for comfort.

DR. C. W. Allen described a screen of plain glass which he had seen used in Germany. It is held before the patient's face during the examination of the throat. It does not obstruct the view and is an admirable protection to the physician if the patient coughs.

THE CHAIRMAN urged that, inasmuch as we now know the specific germ which causes diphtheria and its habitat, we definitely consider what remedies are for its destruction, and what are for the simple comfort of the patient; that the physician spend his time destroying the germs which are thrown off directly from the patient's mouth, and less to blaming sewer gas and germs constantly floating in the air.

DR. FLETCHER has made a series of examinations in tenement-houses and had found the specific bacillus in the air in a number of instances. In one house four cases developed on different floors along the same line of pipes.

Physician. — You seem to cough this evening with less difficulty.

Patient. — No wonder; I have been practising all day. — *Pharmaceutical Era.*

Recent Literature.

Leprosy. By GEORGE THIN, M.D. London: Per-
eival & Co. 1891.

In his preface the author of this book states that one of its chief objects has been to "systematize, for the convenience of the medical profession, the knowledge that has been acquired up to the present time relating to the bacillus leprae, its relations to the pathological changes peculiar to leprosy, and its important bearings on the etiology of the disease; and at the same time to place clearly before the reader the amount and nature of the evidence which can be adduced to show that leprosy is contagious." These objects have been well fulfilled in the little book before us; and it can be warmly recommended to any one who may wish to acquaint himself, at the least possible expense of time and trouble, with the best modern views of the nature of this disease.

The chapter on "history" bears the marks of careful compilation and much erudition, although it is somewhat longer and more critical than would have been looked for in a work of this kind.

With regard to the great prevalence of leprosy in India, — a subject that has of late aroused much interest in Great Britain, leading to the formation of the leprosy commission, — Dr. Thin says there can be no question, although it is impossible even to approach to accuracy in forming an estimate of the numbers of those affected.

The clinical appearances of the two types of leprosy, tubercular and nerve, are sketched with tolerable clearness, although we miss in these chapters, the vivid, sharp-cut picture that a very few writers on dermatology are able to produce with a few descriptive words.

In discussing the pathology of leprosy, the author records his conviction that the bacilli may be distinguished from those of tuberculosis by their microscopical aspects simply, in that the former are more unequal in breadth than the tubercle bacilli, and have a special and characteristic tendency to become club-shaped at one end and tapering at the other. The tubercle bacilli, on the contrary, have a fairly uniform thickness throughout. These are distinctions that have not hitherto been emphasized by observers, and should be verified with the utmost care. With regard to "giant cells," the author says he has not met with them in leprosy, with the exception of some shown him by Dr. Abraham, which he was convinced were nothing but the altered coat of blood-vessels. Typical Langhans giant cells such as are found in tuberculosis, are not, as a rule, seen in leprosy, but the large "lepra zellen" of Virchow are often referred to as giant cells, and of these Thin makes no especial mention. He ranges himself on the side of most other competent microscopists in declaring the proposition of Unna, that the bacilli are not, as a rule, enclosed in cells, absolutely untenable.

The chapter entitled "Is Leprosy Contagious?" we consider the most important in the book, in view of the reluctance evinced by so many medical men, in accepting what seems to us to need no further proof. Sixty-eight instances collected from various sources, are briefly mentioned, where the evidence of transmission of the disease from one individual to another is either conclusive, or extremely strong.

The chapter on the hereditary hypothesis is also well written, the author concluding that in the absence

of proof the hereditary theory must fall, and with the establishment of the contagiousness of the disease, it is no longer necessary even as an hypothesis.

Isolation, in Dr. Thin's opinion, is to be practised with all possible care, although he appreciates the difficulties of carrying this out in a perfect manner. After pointing out the favorable influence of the law passed in Norway in 1885, rendering the segregation of lepers compulsory, he declares his belief that the best hope for India lies in the education of the people to a better understanding of the contagious nature of the disease, and in offering them every facility either for removal to an asylum or for isolation in their homes. We believe that the chief good to be accomplished by the leprosy commission, is an elaboration of the methods by which these aims, so well defined by Dr. Thin, may be attained.

Leprosy and Vaccination. By WILLIAM TEBB. London: E. W. Allen. 1891.

This little pamphlet, written by a layman who is an opponent of vaccination in general, endeavors to show that compulsory vaccination has been responsible in great measure for the spread of leprosy in recent years. The author accepts the theory that leprosy is a bacterial disease, and considers at some length the evidence that it may be inoculated. He also shows that there is good reason for the belief that it may sometimes be transferred from individual to individual by vaccination — a proposition that would be combated by few possessed of any knowledge of the subject. What he does not prove is that vaccination is the chief factor in the spread of the disease, his evidence on this head consisting largely of the general impressions of merchants and medical men in the countries where it is endemic. While no scientific man would agree with the writer that vaccination, as well as all experimentation looking toward the discovery of better methods of treatment of leprosy should be discontinued, it must be conceded that the greatest care in performing the inoculations should be observed; and that the writer, while overstating his case, as is customary with all reformers, has rendered some service by his advocacy of the transmissibility of leprosy from individual to individual.

Botany: A Concise Manual for Students of Medicine and Science. By ALEX. JOHNSTONE, F.G.S. Lecturer on Botany, School of Medicine, Edinburgh. With 164 illustrations and a series of floral diagrams. New York: D. Appleton & Co. 1891.

This manual of 250 pages is intended as a textbook for a student who is at the same time taking a university course in Botany. It is not an elementary work and it is too condensed to be in itself interesting reading. It begins with a concise description of the morphology and physiology of plants, and follows with the principal peculiarities of the more important classes and genera, special attention being given to cryptogams. A good glossary and index add much to the value of the book.

Consumption: How to prevent it and how to live with it. By N. S. DAVIS, JR., A.M., M.D. Philadelphia and London: F. A. Davis. 1891.

Dr. Davis writes especially for the instruction of consumptive patients. His book is very readable and contains much valuable information in general hygiene, exercise, choice of occupation, climate, etc.

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INTESTINAL DYSPEPSIA.

THERE is a form of dyspepsia which is predominantly intestinal. Chymification may be normally performed in the stomach (as is shown by the syphon), but the work of the stomach is not properly supplemented by those processes in the small intestines which elaborate the chyle and render it fit for absorption. Every physician in general practice has had cases which correspond to the following description: The patient has little or no trouble with the primary or gastric digestion, but some few hours after meal has attacks of flatulence with abdominal pains of greater or less severity, and this may be followed by diarrhoea.

Eruptions of gas and the expulsion of flatus do not necessarily indicate faulty intestinal digestion, for the trouble may be purely of gastric origin (type—gastric dilatation, gastric neurasthenia), and it sometimes requires the utmost sagacity of the physician to determine in a given case the parts to be assigned respectively to gastric and intestinal indigestion. Often the flatulent distension can be topographically located in coils of the small intestine or in the colon, while the stomach appears to be empty, or, at least, not distended. Gastrectasis can be differentiated by symptoms of its own; and always the use of the stomach syphon is an aid to accurate diagnosis by the certain information which it furnishes as to the quality of the gastric contents.

A peculiarity of intestinal dyspepsia is that it is principally the starchy and saccharine articles of food that give trouble. This might *a priori* be inferred, for the peptonization of albuminoids is effected chiefly in the stomach, which, in the kind of dyspepsia under consideration, is supposed to be in a relatively normal condition. While then it is quite possible that the ingestion of an excess of albuminoids, over-fatiguing the stomach, may cause intestinal embarrassment (and it is also possible that in rare instances exaggeration of the ordinary peristaltic movements may effect the same result, the ingesta being hurried out of the stom-

ach before the work of chymification is half completed), ordinarily and for all practical purposes the name intestinal dyspepsia may be considered as synonymous with starchy or amylaceous dyspepsia.

Is there a "buccal" or "salivary" dyspepsia due to lack of saliva? The relative part to be assigned to saliva in the conversion of starches has not yet been determined; it is doubtless insignificant as compared with that of the intestinal and pancreatic secretions.

The bile, pancreatic juice and the intestinal juice are the influential factors of intestinal digestion. Deficiency or perversion of any one of these fluids may cause indigestion, and it is probable that atony of the intestinal muscle—as a part of general muscular atony—may in some instances have an important rôle in indigestion.

The influence of bile on the intestinal digestion has long been known. Constipation and flatulence generally accompany deficiency or absence of bile; the rapid emaciation that is seen in individuals or animals with biliary fistula also confirms the traditional physiological notion that the bile is an important agent in the emulsification of fats. Functional or organic derangements of the liver, then, may cause intestinal indigestion.

Deficiency or perversion of the pancreatic secretion will seriously derange chylification. The pancreatic juice possesses ferment which act on all the elements of food; albuminoids, carbo-hydrates and fats; the intestinal juices also transform starches and proteids. These are facts which are sufficiently trite; unfortunately it is difficult, if not often impossible in a given case of dyspepsia, whose seat has been referred to the small intestines, to determine to which of the three factors of the intestinal digestive process the cause belongs, or whether all the glandular secretions may not be about equally at fault. There are, it is true, some symptoms which point clearly enough to intestinal atony by acholia; we have, however, no symptoms which indicate with equal clearness failure of function of the intestinal glands or pancreas. But even if we knew the morbid states productive of the digestive disturbances, we should seldom be able to influence these states directly by remedies; in other words, therapeutics must be symptomatic rather than etiological.

The brief hints which we shall give as to treatment will be comprised under the following heads: (1) Dietetics; (2) antiseptics; (3) eueptic remedies; (4) purgatives.

(1) As this form of dyspepsia is generally predominantly a dyspepsia of starches, there is a leading indication to abstain from amylaceous and saccharine articles of diet. There should be a maximum of albuminoids—meat, eggs, fish, and a minimum of carbo-hydrates and fats. Brilliant results have been obtained from a diet of raw meat—six, eight, even ten ounces of lean beef or mutton reduced to a pulp and cooked but slightly, if at all; to be eaten well seasoned, with a little bread, but without vegetables.

Thin slices of underdone roast meat, fresh broiled fish, raw oysters and other shell-fish, soft boiled eggs, boiled ham. The latter, with sour-kraut, smoked herring, a little stale cheese, etc., has been recommended as being especially unlikely to undergo putrefactive decomposition.

There is no doubt that patients who have been the greatest sufferers from flatulence and colic, the result of intestinal indigestion, have often been marvellously benefited by this meat régime. For drinks, dilute soups, broths, watery solutions of the popular meat-extracts, are always preferable to milk, which is too liable to fermentation. Ales and all other fermented liquids are of course to be eschewed. The same may be said of puddings and gruels. If milk is to be prescribed, milk curds (without sugar) are not always objectionable.

Chronic indigestion is generally the result of flagrant dietary errors. The individual has at some time indulged his appetite to excess, and done this habitually; the digestive organs have become overburdened, and functional derangements, if not gross organic lesions, have resulted. Or food of a poor quality and indigestible, has overtaxed the apparatus of digestion. Here the main treatment must still be dietetic — the only indication capable of fulfilment being to give rest to the damaged organs till *restitutio ad integrum* takes place. The patient must be compelled to live sparingly, and on the kinds of food (principally azotized) which will digest best, and give the least trouble.

(2) There is no doubt as to the utility of antiseptic remedies (that is, remedies which prevent and counteract morbid fermentations) in intestinal dyspepsia. Combinations of chalk, bismuth, magnesia, salol, salicylate of soda, aromatics, are often beneficial. The patient may take after each meal a powder consisting of five grains each of prepared chalk, magnesia and salol, or five grains each of salicylate of bismuth and naphthol. The addition to these powders of a little powdered nux vomica or columbo is often beneficial, especially where there is an indication to stimulate sluggish contractility. Turpentine is a remedy which some think has quite a wide range of usefulness.

Are there ever instances where exaggerated peristaltic movements are the principal cause, the ingesta being hurried out of the stomach into the intestines before gastric peptonization is half completed? If such cases could be diagnosticated, there would be a clear indication for opiates and other remedies which diminish peristalsis.

(3) Among the "eueptic" remedies (that is, remedies which favor digestion), must be mentioned, as being of predominant importance in the dyspepsia under consideration, malt-extracts and pancreatin. Malt-extracts contain diastase and are believed to be of benefit in amylaceous dyspepsia; this belief seems to be sanctioned by clinical experience. To be efficacious they should be given with the food.

Pancreatin, or pancreatic extract, has the earnest commendation of Dr. William Roberts in the *British*

Medical Journal. He directs the usual dose (a teaspoonful of the extract, or ten to fifteen grains of purified pancreatin) to be given with fifteen grains of bicarbonate of soda two hours after a meal when intestinal digestion might be supposed to have fairly begun. Gubler recommended pancreatin to be given in capsules of wax, with the expectation that they would pass through the stomach unattacked by the gastric juice and deposit their contents in the duodenum after destruction of the waxy coating. There are various pharmaceutical preparations which profess to contain the three ferments, diastase, pepsin and pancreatin. Some physicians claim to have derived benefit from these combinations; others look upon the pretensions of their proprietors as illusory. These substances, being ferments, easily spoil, nor is their stability always ensured by combining them with alcohol, which more or less modifies their properties.

(4) The utility of purgatives in clearing the intestines of putrefying débris, of gases, ptomaines and microbes is unquestioned, but they are not to be given as a matter of routine, and only when constipation, colic or other symptoms indicate their administration. The relief which often follows a mild cathartic is great. Of course, only the milder laxatives, and such as disturb digestion the least, are to be thought of. Rhubarb, senna, aloes, sulphur, cascara, magnesia are among the best. A favorite combination is equal parts of pulverized rhubarb and cardamom seeds; dose, a teaspoonful. German Séé prefers the old formula of sulphur, cream of tartar and magnesia, of each equal parts; Dujardin-Beaumetz, the compound licorice powder. The aloin, strychnia, belladonna, and ipecac pill is an excellent one.

"The remedy," says Dr. G. B. Wood, "which we have found most effectual in the permanent cure of a disposition to the accumulation of flatus in the bowels, is an infusion made with half an ounce of columbo, half an ounce of ginger, a drachm of senna, and a pint of boiling water, and given in the dose of a wineglassful three times a day.

TREATMENT OF NEURASTHENIA BY TRANSFUSION (HYPODERMIC INJECTION) OF NERVOUS SUBSTANCE.

At a recent meeting of the Paris Academy of Medicine (Session February 16, 1892), Constantin Paul reminded the assembly of the first communication of Brown-Sequard to the Society of Biology on subcutaneous injections of testicular liquid. In a number of instances a profound stimulation, an uplift of all the forces, followed; this lasted a considerable time, and was not followed by a corresponding depression. Constantin Paul compares this effect to what often takes place after injections of nervous substance into the subcutaneous cellular tissue.

The liquid which he used was a ten per cent. solution of the gray matter of a sheep's brain: this was first macerated for twenty-four hours in glycerine wa-

ter, then filtered through Darsonval's carbonic acid filter, which sterilized it. The resulting liquid was absolutely transparent.

M. Paul first injected one cubic centimetre of this liquid under the skin in the lumbar region, and subsequently increased the quantity to five cubic centimetres every third or fourth day, using all the antiseptic precautions necessary. The injection was perfectly tolerated, producing no local or general reaction. Out of more than two hundred injections practised on eleven patients, he failed in any instance to witness any phlegmon or pustule following the injection.

The patients on whom he performed these injections were classed as follows: Four were victims of tabes; one was a case of permanently slow pulse: three were suffering from ordinary neurasthenia; three were neurasthenic chlorotics. There was in all a general tonic effect characterized by increase of strength, appetite and weight, restoration of spirits and *bien-être*, disappearance of pain, sexual impotence and insomnia.

M. Constantin Paul concludes that "injections of the gray cerebral substance constitute a true tonic for the neuropathic." "The neurasthenic," he adds, "is a patient whose nervous system resembles an accumulator which it is impossible to charge. As long as the disease lasts, the neurasthenic eats to no good purpose, for he cannot transform his food into force. On taking the least exercise, the muscular, nervous and other forces are exhausted."

"The injection of nervous substance promotes the utilization of foods and their assimilation. The nervous system becomes a condenser which can be charged, and the patient acquires a quantum of forces which he can dispose of at his will. But the nervous force is the first to develop, and this leads to the development of the other forces, and the ability to do work of the muscles and brain."

Great expectations may certainly be entertained of this mode of treatment, if one is prepared to believe, as Dr. Paul affirms, that "the injections ameliorate and cure the neurasthenic and enfeebled more rapidly than the ordinary agents of the *materia medica*, iron, arsenic, phosphates, opium and alcohol," and if "their action is more rapid and more certain than that of hygiene alone, of hypnotic suggestion, and of electricity!"

MEDICAL NOTES.

CENSUS OF NEW YORK CITY.—The returns from the State census for New York city, recently completed, not including inmates of public institutions, gives the city 1,890,891 inhabitants. The Federal census of 1890 showed a population of 1,515,501.

ELECTROCUTION IN DANGER.—The New York State Assembly Committee on Codes has agreed to report favorably the bill amending the capital punishment act of the State. The bill does away with the electrical chair and substitutes hanging.

TYPHUS FEVER IN PHILADELPHIA.—Two cases of typhus fever are reported from Philadelphia. The patients are sisters, one of whom had recently arrived from New York, where she was said to have been a nurse in Bellevue Hospital.

UNIVERSITY CHANGES.—The Chair of Obstetrics in the Medico-Chirurgical College of Philadelphia, has become vacant through the resignation of Dr. F. E. Montgomery, who will hereafter devote himself entirely to the Chair of Gynecology. Dr. William G. Anderson, Director of the Brooklyn Normal School of Physical Education, has been appointed physical instructor at Yale.

THE INTERNATIONAL MEDICAL MAGAZINE.—The first number of a new medical monthly with the above title has just appeared. It is edited by Judson Daland, M.D., and published by the J. B. Lippincott Company. Each number is to contain more than a hundred pages, and is to include original contributions, clinical lectures and reviews of recent medical publications. The first issue contains much interesting and valuable reading.

THE NEW YORK STUDENT RELIEF BILL.—There appears to be danger that the value of the new law in New York requiring examination in order to obtain a license to practise medicine, may be diminished by a bill which has been introduced to relieve several medical students from the necessity of passing the State medical examination. There appears to be no reason why these students should be exempt; and if it is possible to enact similar laws yearly, the value of the original law will be very much diminished.

TO EXAMINE RUSSIAN EMIGRANTS.—The Hamburg-American Packet Company, in conjunction with the Prussian authorities, has arranged that all Russian emigrants intending to come to the United States in the Hamburg-American steamers shall be inspected before entering Prussia. Any of these Russians who are suspected of being infected with typhus fever or other diseases will not be allowed to enter the country. All the emigrants' lodgings in Hamburg will be carefully supervised, and another examination will be made by two physicians under the direction of the United States Consul at Hamburg, before the emigrants are permitted to embark upon the steamers.

TUBERCULOSIS IN BUDA-PESTH.—Professor Fodor shows that Buda-Pesth has the greatest relative mortality from tuberculosis of any large city in the world. There are about 600 deaths from this cause in each hundred thousand inhabitants yearly, whereas in Vienna there are about 550 and in London less than 200. He considers that the bad pavement and insufficient street-cleaning have much to do with this large mortality.

VIENNA GENERAL HOSPITAL.—The Austrian Parliament has been considering the advisability of enlarging this already gigantic institution. There is no doubt that most of the buildings now in use are not up to modern standards of hospital construction. It is

proposed to add to the institution the military barracks which now adjoin it.

LECTURES OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON.—The series of lectures for the present year are as follows:—*Mirroy*: by Dr. Francis Warner, "On the Physical and Mental Condition of School Children." *Goulstonian*: Dr. Sidney Martin, "On the Chemical Pathology of Diphtheria, compared with that of Anthrax, Infective Endocarditis, and Tetanus." *Lumleian*, Dr. Pye-Smith, "On Certain Points in the Etiology of Disease."

MEMORIAL TO SIR MORELL MACKENZIE.—Lord Calthorpe, who has had charge of the fund for the erection of a memorial to the late Sir Morell Mackenzie, has announced that the fund will be devoted to the erection of a permanent addition to the Hospital for Diseases of the Throat, which was founded by Dr. Mackenzie in 1864, and with which he was connected until the time of his death.

DIPHTHERIA IN DIFFERENT COUNTRIES.—The Chief of the Bureau of Medical Statistics of Brussels gives the following as the number of deaths from diphtheria in the principal countries of the world, per one thousand inhabitants: England 41, Belgium 44, Holland 53, Switzerland 59, Italy 79, France 80, Germany 100, Scandinavia 110, Spain 112, Austria-Hungary 116, America 140.

THE MILITARY STEP AND ITS PHYSICAL EFFECTS.—A French army surgeon has been making some investigations, says the *Medical Press*, into the physical effects of the military step upon armies on the march. He affirms that the regularity of the step causes the indefinite repetition of a shock to the bones and the brain, infinitely more deleterious than an irregular walk, and to this regular repetition of the shock to the same parts of the body is due the peculiar aches, pains, and sickness among the troops. In a one-day march this shock is repeated 40,000 times, and often the strongest men, who can walk the same distance without difficulty when not in line, succumb to the strain in two or three days. With regard to the remedy, the author suggests the insertion of a rubber heel in all military boots. The heel has been tried at his instance in the French infantry, and the result has been found to afford great relief to the men. The experiments with the rubber heel are still in progress, so that in time we may look for further facts in connection with this subject.

THE HEALTH OF THE SURVIVORS OF THE WAR.—In a recent number of the *Forum* Dr. John S. Billings endeavors to show the effect of military service upon the health of the men in the two armies. Although a large number of men were more or less seriously affected by their services in the field, there were undoubtedly some who derived benefit from the life in the open air and regular exercise. The average death-rate since the close of the war has been between thirteen and fourteen per thousand. It would seem that the average death-rate of the survivors of the war for

the past twenty years has been a little higher than that of the average population of males of the same age. In the State of Massachusetts, according to available statistics, he finds that the proportion of sick men is at least four times greater among veterans than it is among other males of the same age. It would seem, therefore, from the figures which he used that the health of the veteran, in this State at least, was unfavorably influenced by his service. This conclusion is, however, only provisional, and does not seem to accord with his personal opinion derived from contact with a large number of surviving veterans. Statistics are so meagre that it is impossible to arrive at a definite conclusion on this subject.

BOSTON AND NEW ENGLAND.

THE WEST END NURSERY AND INFANTS' HOSPITAL.—The ninth annual report of this institution shows that during the year fifty-four children were cared for in the nursery department and forty in the hospital. Eighteen mothers were admitted.

BIRTHS IN BOSTON.—From the tables recently issued by the acting registrar, it appears that in Boston during the year 1891 the total number of births was 14,206, of which 7,292 were males, and 6,914 females. The daily average was 39.05. There were 245 colored births, of which 109 were male and 136 female. There were 142 pairs of twins, and four sets of triplets. There were two Chinese children born, one male and the other female.

A CREMATORIUM IN BOSTON.—Arrangements have been completed for the transfer of the control of the Worcester Cremation Society to Boston. The company is duly incorporated under State laws and has a capital of \$25,000. It is said that 150 stock subscriptions have been made in Boston, and that a lot will be purchased and a crematory erected. The following are the officers: Clerk, Dr. John Homans, 2nd; treasurer, John Ritchie; directors, Dr. James R. Chadwick, Dr. Henry P. Bowditch, Augustus Hemenway, Russell Sturgis, Jr., and Babson S. Ladd, all of Boston; Stephen Salisbury and Dr. J. O. Marble of Worcester. There are also two women on the directorate.

MASSACHUSETTS LEGISLATURE.—In the House the cigarette bill was amended so that the manufacture and sale of those cigarettes only is forbidden which are wrapped in paper covers. The prohibition seems now to be reduced so as to apply only to the smoking of paper. The bill was laid over until this week. The Committee on Public Charitable Institutions has reported a resolve to appropriate for the Massachusetts Charitable Eye and Ear Infirmary, and has reported leave to withdraw on the petition for the appointment of a woman on the Board of Public Institutions in Boston.

MARINE HOSPITAL ON MARTHA'S VINEYARD.—The Government has accepted six acres of land at Vineyard Haven as the site of the new Marine Hospital. The tract is situated on the bluff across the harbor from the village of Vineyard Haven.

NEW YORK.

TYPHUS FEVER.—Up to March 10th there were reported 153 cases of typhus fever, among which there were 13 deaths; two of the deaths being among the attendants on the sick in the hospital. At that date there were at North Brother Island 82 typhus patients and about 80 quarantined individuals who had been exposed to the infection of typhus. On the following day there were two additional deaths and three new cases reported. The Board of Health has engaged in an investigation of the hospital at North Brother Island, serious charges having been made as to the manner in which patients were treated there.

BEQUESTS TO INSTITUTIONS.—By the will of Major-General George W. Cullum, recently deceased, \$6,000 is left to the Woman's Hospital and \$10,000 to the New York Cancer Hospital, which the wife of Gen. Cullum had liberally endowed.

TRAINING SCHOOL FOR MALE NURSES.—The graduating exercises of the Bellevue Hospital Training School for Male Nurses took place on the evening of March 9th. The Training School for Male Nurses was opened for the reception of pupil nurses on December 17, 1888. In 1891 the school graduated eighteen nurses. This year there are seventeen graduates. There have been 698 applications for admission, 166 probations have been accepted, and there are now 56 pupil nurses on the rolls.

—
Miscellany.

THE PADDOCK BILL FOR PURE FOOD AND DRUGS.

The Paddock Pure-Food bill as recently passed by the Senate provides for the organization, in the Department of Agriculture, of a section, to be known as the food section of the chemical division, whose duty it shall be to analyze, or cause to be analyzed or examined, samples of food or drugs offered for sale in any State or Territory other than where manufactured, or in any foreign country, provided they be in original and unbroken packages. It prohibits the introduction into any State or Territory, from any other State or Territory or foreign country, of any article of food or drugs that is adulterated or misbranded, and makes the act of doing so a misdemeanor, punishable by a fine not exceeding \$200 for the first offence and not exceeding \$300 for each subsequent offence, and by imprisonment for one year.

The term "drug," as used in the act, is to include all medicines for internal or external use. The term "food" is to include all articles used for food or drink by man, whether simple, mixed, or compound. Drugs are to be considered adulterated when they differ from the standard of strength, quality, or purity recognized in the United States Pharmacopœia or other standard works, or when in imitation of and sold under the specific name of another article; when mixed, colored, powdered, or stained so as to deceive the purchaser; when poisonous or injurious ingredients are added;

when the article consists, in whole or in part, of a diseased, filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food.

Articles of food or drugs that do not contain any poisonous ingredient shall not be deemed to be adulterated in the case of mixture or compounds under distinctive names; or in the case of articles labelled, branded, or tagged so as to indicate plainly that they are mixtures, compounds, combinations, or blends; or when any matter is added so as to fit the article for carriage or consumption and not to increase its bulk fraudulently or to conceal its inferior quality; or where the food or drug is unavoidably mixed with some extraneous matter in the process of collection or preparation.

Every person who manufactures for shipment and delivers for transportation, from any State or Territory to any other State or Territory, any drug or article of food, and every person who exposes such articles for sale, is required to furnish samples to agents of the Secretary of Agriculture. A refusal to do so is punishable by a fine not exceeding \$100 and not less than \$10, or by imprisonment from 30 to 100 days, or both.

The manufacturer or seller (knowingly) of adulterated, impure, or misbranded articles of food shall, in addition to those penalties, be adjudged to pay all the necessary costs and expenses of inspection and analysis.

The act is not to be construed to interfere with commerce wholly internal in any State or with the exercise of police powers by the States. Adulterated articles transported or being transported from one State to another for sale, and still in unbroken packages, may be proceeded against in the United States District Court by a process of libel for condemnation and may be sold and the proceeds paid into the Treasury.

THE TREATMENT OF THE CRIMINAL INSANE.

At a meeting of the New York Medico-Legal Society, March 9th, Mr. J. T. Graham, of Virginia, read a paper entitled, "What should be Done with Criminals who are Acquitted for Crimes on the Charge of Insanity?" He contended that the number of prisoners released on the plea of insanity was increasing at such an alarming rate that the country was being overrun with the impostors who only feigned insanity at their trial, and with persons who were really insane and were dangerous to the community. He proposed that every person who was guilty of murder, but who was adjudged insane, should be compelled to remain in an asylum for at least ten years. If, during the last five years of this term of confinement they should show no signs of insanity, they should be released. If they did, however, display any symptoms of insanity, they should not be allowed their freedom until five years after such symptoms ceased.

After some discussion of the paper by others, Judge A. L. Palmer, of St. John, spoke of the manner in which such persons were treated in the Dominion of Canada. He said that if a criminal were adjudged insane in the courts, he was incarcerated in an asylum, and was kept there until the Governor-General was pleased to release him. If, after some time, the prisoner was considered of sane mind by those in charge of him, the Governor-General appointed a commission of experts to examine into the case, and if it were re-

ported that the prisoner would not be likely to endanger society on account of his mental condition, the Governor-General would, if he saw fit, release him.

THE WATER-BED AS A MEANS OF AFFECTING THE TEMPERATURE OF THE BODY.

Dr. H. C. Wood¹ calls attention to the water-bed as a means of heating the human body during collapse and cooling it during fever.

In cases of collapse and subnormal temperature occurring during advanced stage of typhoid fever, the severer forms of bronchitis, etc., he has been accustomed to employ an india-rubber water-bed, about half the width of the ordinary mattress. It is placed upon the bed, alongside the patient, partially filled with water at a temperature of 140° to 150° F., and covered with blankets, upon which the patient is laid. The weight of the body carries it down and forces the water up at the sides, so that the person is partially surrounded by the heated water. The mass of the water, and the protection of the blankets, prevent the loss of heat, so that the mattress keeps hot for many hours. When the heat of the body has reached 98.5° F., the patient may be lifted off and laid alongside of the water-bed, which being covered by the same blankets as are over him will keep the temperature up to the normal.

The success in heating the body with this contrivance suggests that the water-bed may also be used instead of the cold bath for reducing temperature. All that would be necessary would be to have the water-bed supplied with two nozzles, instead of the ordinary aperture, and an india-rubber tubing or hose fastened to each nozzle, connecting the one with the spigot, the other with the outlet of the neighboring bathtub or stationary washstand. In this way, without labor or trouble, water of a constant temperature of 40° to 50° F., at least in winter, could be kept in the bed, and it would be very easy to run the water through ice if it were necessary to get further lowering of the temperature.

BANANA FLOUR.

In the *Scientific American* for October 10th, mention is made of the need of a flour for domestic purposes made from the banana.² The author of the article estimates that in Jamaica alone, from whence about one-third of our banana supply comes, the waste in the fruit amounts to several hundreds of thousand bunches per annum, and this, too, with less than one-tenth of the available fruit-producing land under cultivation.

Undersized or undeveloped bunches are rigorously cast out by the buyers, and at many ports these may be had for the asking or at a merely nominal price.

von Humboldt has estimated that thirty-three pounds of wheat, or ninety-nine pounds of potatoes require as great a space for their production as do 4,000 pounds of bananas; and that three good bananas contain as much nutriment as does a fourteen-ounce loaf of bread.

While this "bread of the tropics" will withstand the amount of handling necessary to transportation to our northern markets, by means of our rapid freight delivery systems, it will not withstand a much longer

series of shipments. At present the finest flavored bananas are almost unknown in northern Europe, not because the fruit is unappreciated, but because after transportation to those countries the fruit is in an unmarketable condition. So that from this reason two lines of inventions are sorely needed in the West Indies having to do with banana culture. With these the banana output would soon be doubled, and in time might easily be increased tenfold. These two needed inventions are a dessicating and a flour or meal making process. The former is at present more in demand, so that in those regions the traveller hears the cry continually on every large plantation, "Oh! if some one would only invent and perfect a drying or preserving process that could be depended upon."

The man or men who can put before the banana growers of the West Indies, who annually sent to the United States \$4,000,000 worth of the fruit, any system which will do for the banana what is now done for the fig, grape, or the dried currant, or who can succeed in treating the fruit as well as peaches, apricots, or prunelles now are, will be the possessor of a wealth-producing invention. And the same may safely be predicted of the system that will succeed in putting into the meal or flour a fair portion of the marvellous sustaining and nourishing powers which make the banana the king among fruits.

THERAPEUTIC NOTES.

HYDRASTININ. — Strassmann¹ presents a paper upon this drug, which is to be distinguished from hydrastin. The dose is: in form of pill, one-half grain; in subcutaneous injection, one to two grains. The results of administration in twenty-seven cases lead him to believe it to be a very valuable remedy in the menorrhagias and metrorrhagias due to various pathological conditions so often met with in gynaecological practice. At present, however, the remedy is quite expensive.

BANANAS IN CHRONIC BRONCHITIS. — For chronic bronchitis with scanty expectoration the use of banana-juice has been recommended.² The juice is prepared by cutting up the bananas in small pieces, and putting them, with plenty of sugar, in a closed glass jar. The latter is then placed in cold water, which is gradually made to boil. When the boiling point is reached, the process is complete. Of the syrup so made, a teaspoonful every hour is the proper dose.

ACETANILID FOR THE PRESERVATION OF SOLUTIONS. — Keenan³ recommends the addition of a small amount of acetanilid to solutions of alkaloids to prevent fungoid growths.

THE ADMINISTRATION OF CHLOROFORM. — Gisevius⁴ describes a method of administering chloroform by the drop-by-drop method which has been used by several surgeons in Europe.⁵ This consists of giving the chloroform in drops only, continuing for five or ten minutes until the patient is completely narcotised. The advantages of this method are, absence of the reflexes proceeding from the mucous membranes, the

¹ Deutsche med. Wochenschrift, 1891, No. 47.

² Medical and Surgical Reporter, September 5, 1891.

³ American Druggist, December.

⁴ Medical Press, February 10.

⁵ Brandt. Centralbl. f. Chirg., No. 47, 1891.

¹ University Medical Magazine, March.

² Sanitarian, February.

absence of the stage of excitement and the small amount of chloroform necessary. At the Augusta Hospital no case of cardiac syncope or failure of respiration have occurred since the method was introduced.

With regard to the pure chloroform of Pictet, Bardeleben finds that it acts more quickly and in a milder manner than the old, and that less is required. Koite, however, had had a death from the purified drug in a healthy patient. This case strengthened his belief that deaths from chloroform were not, as a rule, due to any impurity in the drug used, but to the individual characteristics of the patient. Hahn gave chloroform by gradual droppings; the anesthesia was very satisfactory, even in drinkers. He let about sixty drops per minute fall from an ordinary drop bottle upon the mask.

Correspondence.

LETTER FROM JAPAN.

YOKOHAMA, February 9, 1892.

MR. EDITOR:—The Central Board of Health for Japan operates in the capital, Tokyo, under control of the general government. It is composed of physicians, chemists, jurists and other officials. This board is an advisory council for the executive authorities. Its officers go to various parts of the empire for sanitary inspection and supervision. In each of the forty-five Ken (or provinces) of the country, is a local Board of Health of similar construction and functions, with analogous relations to the local government.

There is also a parallel organization known as "The Sanitary Association," which has the approval of the government, but no formal official recognition. Its work supplements that of the Board already mentioned: such voluntary assistance is especially valuable during epidemics. This society publishes a monthly "Journal" in the Japanese language. This publication has about fifty pages (12mo); several articles are accompanied by cuts showing plans of contemplated works, and forms of apparatus. A large number of different subjects more or less directly connected with sanitation are discussed in each issue.

A recent number of the *Sei-ka* (Medical Journal) contains some interesting matter republished as follows in the *Japan Mail*:—Dr. J. Sakaki contributes a paper containing the results of experiments carried on by him to determine whether rice in certain conditions has any poisonous properties. These experiments seem to have been suggested by an idea that possibly *kakke*, that disease so serious in Japan, might be due to rice-poisoning. Dr. Sakaki began his investigations in 1888. He tells us very simply that, finding the intervals of his regular work insufficient for the purpose, he resigned his position in the Imperial University, and devoted himself wholly to experimenting. He commenced by examining the fungi found on ears of rice, and then he passed to "red rice," that is to say, rice that had changed its color during cultivation. But the results obtained in these cases were negative. Success attended him, however, on proceeding to examine mouldy rice, commonly called *sawate-mai*. Mouldiness in rice is caused by rain, when it is called *umore-sawate*; or by simple moisture, when it is *fuke-mai*; or by some unexplained local influence, when it is called *mosu-mai*. It appears in the form of yellowish gray spots, and Dr. Sakaki speaks of grains thus marked being mixed with the rice eaten every-day by Japanese. He made various investigations to determine how the spots were produced, but the results are not yet published, though he foresees that they will be of practical value in respect to the storing of grain. There seems to have been considerable difficulty in extracting the supposed alkaloid poison from the rice, 2,500 grammes of mouldy rice giving only 0,299 gramme of the alkaloid, but the tests made with the

latter upon frogs and rabbits go to prove very clearly Dr. Sakaki's conclusions, namely, that mouldy rice contains a small quantity of poisonous principles, which act slowly, on the nerve centres for the most part, and the chemical composition of which is as yet unknown.

Dr. Kusaka's paper, originally published in the *Official Gazette*, discusses that very interesting and often referred to question, whether flies assist to propagate epidemic diseases. Our readers probably remember the newspaper accounts of a panic caused in an American town last year by the suggestion that mosquitoes could carry poison from a Chinese leper throughout the whole community. Dr. Kusaka's researches go to prove that there was good reason for the scare. His experiments show that cholera bacilli, for example, may find a congenital nutritious fluid in a fly's abdomen, and may thus be transported from an infected place to the food which a healthy person is about to eat. This fact will furnish another argument to persons who maintain the uselessness of quarantine and other means of isolating sufferers from infectious diseases."

The number of cases of small-pox officially reported in Tokyo on the 30th and 31st of January was 102. During last month 1,073 persons were affected, with 272 recoveries and 91 deaths. The disease appears to be abating in Yokohama, the number of new cases reported being about ten daily. 80,000 persons have been vaccinated by the authorities during the prevalence of variola. The population of this city was 139,045, December 31, 1891.

Very respectfully, F. B. STEPHENSON,
Surgeon, U. S. N.

A NEW, SAFE AND SURE METHOD OF EXPEDITING DIFFICULT CASES OF LABOR.

ALLSTON, MASS., March 3, 1892.

MR. EDITOR:—A correspondent, in your issue of February 25th, refers to my remarks February 4th on "A New, Safe, and Sure Method of Expediting Difficult Cases of Labor." Dr. Playfair, of London, in speaking of this modern oxytocic, says: "I am satisfied we have in it a most valuable addition to our resources, which is as yet not sufficiently appreciated, and which is destined to take a recognized place . . . in every way safer and more manageable than ergot." He also says, "I have never seen anything which led me to think that with due care, it has had any sort of injurious effect."

In the *Illustrated Encyclopedia of the Science and Practice of Obstetrics* (p. 150, ¶ 7), published in 1883, one year after my article was read before the Gynecological Society of Boston, the writer says, referring to this method: "It has the peculiar advantage of closely imitating the natural means of delivery, and of being absolutely without risk to the child. Nor is there any reason to think that it is capable of injuring the mother; . . . as its application is always intermittent, there is no time for it to inflict any injury on the uterine tissues." My eighteen years' practice and use of this method proves to me its perfect safety when intelligently used. It would seem, that the above evidence was satisfactory as to the safety of the method.

As to its being new: from time immemorial, by certain wild tribes of men, as in some civilized countries in modern times, assistance has been rendered women in labor in some manner, somehow, by pressure applied by various means, as well as by the hands of the accoucheur directly applied upon the abdomen, but not always safely or in an intelligent manner. The method, as formulated in my article, giving explicit directions how, and when, pressure should be applied, and the precautions relative to its use and application, was certainly new.

I do, most decidedly, take exception to the statement of your correspondent, "but all things were natural," in the patient he alludes to, she having taken ergot in the first stage of labor and been subjected to its physiological action, — a tonic contraction of all the muscles of the uterus until their complete exhaustion, — and there continuing a condition

of complete inertia of the womb for twelve hours or more, the child still unborn; for neither the patient nor the child under those conditions could be in a natural condition.

A practitioner giving ergot as above, with such results, would be guilty of the grossest malpractice; for if you induce the physiological action of ergot on the womb, in a case as cited above, and the child is not born within an hour of the commencement of such action (the tonic contraction continuing), you will invariably have a dead child as a result of such a use of ergot. Such a practitioner would not be using the ordinary care or skill in the practice of the obstetric art which the law requires.

I do not believe that it was possible for the intermittent pains of labor, with the pressure applied intermittently as claimed (without some other attending circumstance) to produce strangulation of the cord and death of the child; certainly not, before it had entered or passed the upper strait.

We very much doubt that the consensus of opinion of obstetricians of to-day would advise venesection, in the average woman in labor under like conditions as in the case cited, to the extent of overcoming the rigidity of the unyielding os, when a few doses of chloral hydrate would speedily and safely overcome the rigidity, leaving the patient in a more natural condition and without the shock and excitement and the anæmia which would be induced by the venesection.

Yours very truly.
MARSHALL L. BROWN, M.D.

"KEEN'S OPERATION" FOR SPASMODIC TETRICOLOSS DUE TO IMPLICATION OF THE POSTERIOR ROTATORS.

35 W. 35TH STREET,
NEW YORK, March 8, 1892.

MR. EDITOR:—Your issue for January 7th, current year, contains a stenographer's report of the proceedings of the New York Neurological Society, in which report mention is made of a case of wry-neck operated upon by me. Reference to the complete paper, *New York Medical Journal*, March 5, 1892, will show that full credit for priority in conception, execution and publication of the operation as done by me is, and should be, accorded to Dr. W. W. Keen of Philadelphia. I feel that the procedure is one of much value,—one which will be of use and of necessity in intractable cases of wry-neck due to spasm of the posterior rotators,—and I am sure that you will be glad to place before your readers the credit which is due Dr. Keen for his original and painstaking work.

Very truly yours,

CHARLES A. POWERS, M.D.

METEOROLOGICAL RECORD.

For the week ending March 5, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Data.	Baro-meter	Thermometer.	Relative humidity.	Direction of wind.	Velocity of wind.	W ^e thr.	Rainfall in inches.
	Daily mean.	Daily mean.	Minimum.	8.00 A. M.	8.00 P. M.	8.00 A. M.	
S. - 28	30.64	17	23	11	81	86	24
M. - 29	30.31	23	34	21	88	90	89
T. - 1	30.14	35	30	11	81	90	89
W. - 2	30.00	17	19	15	94	84	89
T. - 3	29.90	24	30	11	81	86	87
F. - 4	29.72	33	46	26	77	87	84
S. - 5	29.63	33	43	25	57	50	24
EF.	30.68	26	32	21	81	78	80
							19 22
							.14

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. + Indicates trace of rainfall. — Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 5, 1892.

Cities.	Estimated population for 1880.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from			
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhoeal diseases.
New York	1,315,201	921	359	11.82	24.64	4.97	1.10
Chicago	1,050,835	514	191	17.65	14.82	3.61	1.33
Philadelphia	1,046,964	314	120	11.04	23.76	3.12	4.94
Brooklyn	806,343	412	130	14.44	10.20	1.20	5.76
Boston	451,770	167	56	10.80	14.82	4.89	3.60
Baltimore	444,196	196	56	11.73	23.97	4.08	1.53
Cincinnati	434,439	—	—	—	—	—	5.19
Cleveland	296,908	123	43	9.72	10.53	1.62	4.86
St. Louis	282,090	—	—	—	—	—	—
New Orleans	292,039	100	36	35.12	16.20	2.16	—
Portland	230,382	130	35	6.16	26.18	—	5.40
Washington	230,382	130	35	29.11	27.60	—	1.54
Nashville	176,168	88	32	3.63	10.52	—	—
Portsmouth	85,163	38	13	3.68	—	2.63	—
Worcester	84,025	25	6	12.00	8.00	4.00	4.00
Lowell	77,696	51	13	11.76	11.76	1.96	1.96
Fall River	74,398	40	14	10.00	20.00	5.00	—
Cambridge	70,028	24	10	12.50	16.66	4.16	—
Lawrence	67,028	23	7	30.43	13.03	—	—
Pittsburgh	44,154	23	15	13.04	8.70	4.35	4.35
Springfield	44,179	—	—	—	—	—	—
New Bedford	40,733	—	—	—	—	—	—
St. Paul	30,803	12	4	3.33	8.33	—	—
Chelsea	27,699	13	8	23.07	7.69	7.69	7.69
Haverhill	27,412	6	2	16.66	16.66	—	—
Taunton	25,445	16	7	12.50	6.25	—	12.50
Gloster	24,651	3	2	—	33.33	—	—
Newton	24,379	9	4	—	—	—	—
Wellesley	22,033	8	4	50.00	25.00	25.00	40.00
Pittsburgh	22,035	8	4	—	25.00	—	—
Waltham	18,570	7	1	—	28.57	—	—
Pittsfield	17,281	3	0	—	—	—	—
Quincy	16,723	6	3	—	16.67	—	—
New Hampshire	15,109	1	0	60.00	25.00	25.00	20.00
Newburyport	13,947	6	3	—	16.66	—	—
Medford	11,079	8	2	25.00	25.00	12.50	—
Hyde Park	10,100	5	1	40.00	—	—	—
Peabody	10,158	5	3	20.00	—	—	—

Deaths reported 2,937: under five years of age 1,041: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fever) 384; acute lung diseases 289; consumption 361; diphtheria and croup 152; scarlet fever 87; diarrhoeal diseases 56; typhoid fever 32; diphtheria 21; cerebro-spinal meningitis 17; erysipelas 14; whooping-cough 11; malaria 10; typhus 4; tularemia 2; puerperal fever 2; small-pox (New York) 1.

From typhoid fever Philadelphia 14, Pittsburgh 6, New York and Lowell 3 each; Boston, Cincinnati, Washington, Fall River, Lawrence and Haverhill 1 each. From measles New York 14, Brooklyn 3, Philadelphia 2, Pittsburgh and Worcester 1 each. From cerebro-spinal meningitis New York 7, Brooklyn, St. Louis and Washington 2 each; Philadelphia, Nashville, Lowell and Malden 1 each. From erysipelas New York 8, Cincinnati 3, Brooklyn, Washington and Northampton 1 each. From whooping-cough New York 3, Fall River, Cambridge, Gloucester and Medford 1 each. From malarial fever Brooklyn 3, New York 1. From typhus fever New York 2. From puerperal fever Boston and Cambridge 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending February 27th, the death-rate was 23.4. Deaths reported 4,571: acute diseases of the respiratory organs (London) 461; whooping-cough 155; measles 123; diphtheria 49; diarrhoea 39; scarlet fever 31; small-pox (Liverpool) 1.

The death-rates ranged from 14.2 in Croydon to 34.0 in Bury; Birmingham 23.6, Bradford 19.7, Hull 18.3, Leeds 21.4, Leicester 21.5, Liverpool 29.6, London 22.4, Manchester 25.0, Nottingham 27.4, Plymouth 23.1, Sheffield 21.7, West Ham 18.6, Wolverhampton 25.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 5, 1892, TO MARCH 11, 1892.

MAJOR ALFRED A. WOODHULL, surgeon, U. S. A., having completed the duties assigned him by Par. 4, S. O. 303, A. G. O., December 30, 1891, will proceed from New York City, N. Y., to Hot Springs, Arkansas, and take station thereat as surgeon in charge of the Army and Navy General Hospital.

March 9, 1892. By direction of the President, the retirement

from active service this date, by operation of law, of COLONEL **BASIL NORRIS**, surgeon, U. S. A., is announced.

FIRST-LIEUT. PHILIP G. WALES, assistant surgeon, U. S. A., is relieved from further duty at Fort Apache, Arizona, and will report in person to the commanding officer, Fort Bowie, Arizona Territory, for duty at that station, relieving **FIRST-LIEUT.** WILLIAM N. SUTER, assistant surgeon, U. S. A.

A board of medical officers to consist of **MAJOR DAVID L. HUNTINGTON**, surgeon; **CAPTAIN HENRY S. TURBILL**, assistant surgeon; **CAPTAIN HENRY S. KILBOURNE**, assistant surgeon; **CAPTAIN WALTER W. R. FISHER**, assistant surgeon, is constituted to meet in New York City, on the 1st day of April, 1892, or as soon thereafter as practicable, for the examination of candidates for admission to the medical corps of the Army.

CAPTAIN MARLBOROUGH C. WYETH, assistant surgeon, U. S. A., is relieved from further duty at Fort McIntosh, Texas, and ordered to Fort Supply, Indian Territory, upon the expiration of his present sick leave of absence.

CAPTAIN JEFFERSON R. KEAN, assistant surgeon, U. S. A., is relieved from duty at Fort Robinson, Neb., and ordered to St. Francis Barracks, Mo., for duty, not later than March 25, 1892, relieving **MAJOR DAVID L. HUNTINGTON**, surgeon, U. S. A. Major Huntington, upon being relieved by Captain Kean, will proceed to New York City, for duty in connection with the Army Medical Board.

CAPTAIN MARCUS E. TAYLOR, assistant surgeon, U. S. A., granted leave of absence for six months, on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 12, 1892.

F. B. BRAITHWAITE, assistant surgeon, from Marine Hospital, Chelsea, and to the U. S. S. "Fern."

M. F. GATES, assistant surgeon, from the U. S. S. "Fern" and granted two months' leave.

HENRY LA MOTTE, assistant surgeon, ordered to the U. S. Receiving-ship "Vermont," at New York.

L. L. VON WEDEKIND, assistant surgeon, from the U. S. S. "Vermont," and granted three months' leave.

EDW. KERSHNER, medical inspector, orders to the U. S. S. "San Francisco" revoked.

WM. K. VAN REYSEN, medical inspector, detached as assistant to Bureau, Medical and Surgical, and to the U. S. S. "San Francisco."

J. D. GATEWOOD, passed assistant surgeon, ordered to the U. S. S. "Dolphin."

E. R. STILT, assistant surgeon, ordered to the Naval Hospital, Philadelphia, Pa.

INTERNATIONAL PERIODICAL CONGRESS OF GYNECOLOGY AND OBSTETRICS.

The Belgian Society of Gynecology and Obstetrics, under the patronage of the Belgian Government, has taken the initiative in organizing "The International Periodical Congress of Gynecology and Obstetrics," the first session of which will be held in Brussels, September 14 to 19 inclusive, 1892.

Three leading questions will be offered for discussion: (1) "Pelvic Suppurations"; Referee, Dr. Paul Segond, Paris. (2) "Extra-Uterine Pregnancy"; Referee, Dr. A. Martin, Berlin. (3) "Placental Praevia"; Referee, Dr. Berry Hart, Edinburgh.

Fees. — Members participating in first session, 30 francs. (This will entitle the holder to a copy of the proceedings of the Congress.) Foreign (life-membership), 300 francs.

In connection with the Congress there will be an International Exhibition of Instruments and Appliances pertaining to Gynecology and Obstetrics.

All communications pertaining to this Congress should be mailed direct to the American Secretary, who will promptly furnish all information. All notifications to be forwarded should be received by August 1st.

DR. JACOBS, *Secretary General*,
12 Rue Des Petits-Carmes, Bruxelles.
DR. F. HENROTIN, *American Secretary*,
334 La Salle Ave., Chicago.

ELEVENTH INTERNATIONAL MEDICAL CONGRESS ROME, 1892.

The Tenth International Medical Congress, meeting at Berlin in 1890, appointed, when closing the session, Rome as the seat of the Congress in 1893, and Rudolf Virchow, consigning the standard of the presidency to Prof. Guido Bacelli, formed his best wishes for the next meeting of so many illustrious men of science.

The presidents of the Medical Faculties, of the Universities and scientific institutions, together with the most prominent

personalities of the Italian medical body, united in Rome in order to establish the basis of the future *Eleventh International Medical Congress*, and proclaimed by acclamation the Hon. Guido Bacelli, President General; Prof. Edvardo Maragliano, clinical physician in Genoa, was elected Secretary General; Comte Prof. Pagliani, Director General for Public Health in Italy, Treasurer, and Comm. Ferrando, chief of department at the Ministry for Public Instruction, Manager. At the same time were elected by acclamation the following committees of the four main sections corresponding with the following division of the scientific works of the Congress: (1) Anatomy; (2) Physiology; (3) Medical Clinic; (4) Gynecology; (5) G.I. Pathology and Anatomical Pathology; (6) Pharmacy; (7) Surgery and Orthopedics; (8) Psychiatry and Neuropathology; (9) Ophthalmology; (10) Dermosiphilopatology; (11) Legal Medicine; (12) Hygiene; (13) Laryngology and Otology; (14) Military Medicine and Surgery.

The Central Committee has lately elected the foreign committees for the purpose of inviting every nation in the world to adhere to the scope, so that the Congress may turn out worthy of the former ones and add to them what will give the honour of sheltering it. This time, till now chosen for the convection of the Congress, is the month of September, a period when the capital offers a very fine and splendid climate to all its fascinating attractions.

All preparations proceed with promptness and give assurance of a grand and perfect success.

PROF. E. MARAGLIANO, *Secretary General*, Genoa, Italy.

PROF. GUIDO BACELLI, *President General*.

RECENT DEATHS.

SAMUEL LAWRENCE MOORE, M.D., M.M.S.S., died in Boston, March 13, 1892, aged fifty-six years.

BOOKS AND PAMPHLETS RECEIVED.

Ninth Annual Report of the West-End Nursery and Infants' Hospital. Boston. 1892.

Two Addresses upon the late Joseph Leidy, M.D., I.L.D. By William Hunt, M.D. 1891.

Fourteenth Annual Report of the Board of Health of the City of Lowell, for the Year 1891.

Fourteenth Annual Report of the Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore. 1891.

A System of Practical Therapeutics. Edited by Hobart Amory Hale, M.D., assisted by Walter Chrystie, M.D. Volume II. Philadelphia: Lea Brothers & Co. 1892.

Prescribing and Treatment in the Diseases of Infants and Children. By Philip E. Musket, late Surgeon to the Sydney Hospital. Philadelphia: P. Blakiston, Son & Co. 1891.

A Quarter of a Century's Retrospect of Laryngology. By Lennox Browne, F.R.C.S., Ed., President of the British Laryngological and Rhinological Association. London. Reprint. 1892.

Cure Radicale de la Hernie Sans Etranglement Chez La Femme. Par Le Dr. Just Lucas-Championniere, Chirurgie de l'hôpital Saint-Louis. Paris: Alex. Cooz, Libraire-Éditeur. 1891.

Surgical Diseases of the Ovaries and Fallopian Tubes, including Tubal Pregnancy. By J. Bland Sutton, F.R.C.S., assistant Surgeon to the Middlesex Hospital, London. Philadelphia: Lea Brothers & Co. 1892.

Memorial: Embodiment Reasons why the Asylum for Insane Criminals, at Auburn, should not be made a receptacle for the Non-Criminal Insane. By Wm. F. Letchworth, Commissioner of the State Board of Charities. Buffalo. 1892.

Diagnosis of the Throat, Nose and Ear. A Clinical Manual for Students and Practitioners. By P. J. McLean, M.D., F.R.C.P., Surgeon to the Ear and Throat Department of the Royal Infirmary, Edinburgh. Philadelphia: W. Blakiston, Son & Co. 1892.

The Mediterranean Shores of America: or, The Climate, Physical, and Meteorological Conditions of Southern California. By P. O. Remondino, M.D., Member of the State Board of Health of California. Illustrated with forty-five engravings and two double-page maps. Philadelphia: F. A. Davis & Co. 1892.

A Dictionary of Treatment or Therapeutic Index, including Medical and Surgical Therapeutics. By William White, M.D., Professor of Materia Medica and Therapeutics in the Queen's College, Belfast, etc. Revised and adapted to the Pharmacopeia of the United States. Philadelphia: Lea Brothers & Co. 1892.

A Practical Manual of Diseases of the Skin. By George H. Robe, M.D., formerly Professor of Dermatology in the College of Physicians and Surgeons, Baltimore, etc., assisted by J. Williams Lord, A.B., M.D., Lecturer on Dermatology and Bandaging in the College of Physicians and Surgeons. No. 13 in the Physicians' and Students' Ready-Reference Series. Philadelphia: F. A. Davis & Co. 1892.

Original Articles.

CONDITION OF THE BLOOD IN CERTAIN MENTAL STATES.

BY S. G. WEBBER, M.D., BOSTON.

THE following cases of mental depression, of greater or less severity, in which the blood-corpuscles were counted, are of much interest. The patients were treated at the Adams Nervine Asylum. The first two cases were the severest, both were sent away on account of the amount of depression. In them the blood was poor in red corpuscles, which were also deformed, resembling in this respect the blood of pernicious anaemia. The other cases were less serious and the blood was in a more healthy condition, yet not quite up to the normal standard, except in two cases of dyspepsia.

It may be a question as to how much the mental depression affected the blood, or whether the poor blood was one factor in causing the depression. I believe the latter is the correct statement of the sequence of events.

CASE I. Miss C. E., age thirty-eight, was at one time melancholic, with suicidal tendency. The family history is bad nervously, there being insanity and eccentricity in the family. The patient has been somewhat depressed for a year, and more or less low-spirited. She had been subject to sick-headaches, less lately than when younger; these continued one or two days with nausea and vomiting. She has had pain in her back and abnormal sensations in her legs. Hands and feet were habitually cold. She had a "thumping and beating" in her head, tinnitus aurium; did not hear voices. She had attacks during which she cried and lay awake nights crying. There were no objective symptoms except a great degree of pallor, lips and tongue as well as skin showing anaemia.

The blood was examined, and there was found a diminution of the red corpuscles, 4,190,000; a very large number were misshaped, being elongated, budded and without concavity.

Valerianate of zinc, iron, and quinine was given, also arsenic; she had massage, and attention was paid to diet and the digestive organs, moderate exercise and as much out-door life as possible.

After five months the patient had gained in flesh, color and spirits. The blood was again examined and showed 4,790,000 red and 10,000 white corpuscles; the deformed corpuscles were very rare, only a few being seen.

The patient was much disturbed by the prospect of leaving, uncertain as to her future, feeling that she ought to take up the duties of life again and yet conscious that she was not able so to do. A visit from a relative, who talked with her on these subjects disturbed her, and she left in a much less cheerful disposition, tearful and despondent.

CASE II. Mrs. N. S. R., was forty-four years old when received. She had been ailing many years, had never been strong. She had no living children; one child was born at seven months; had one miscarriage twelve months before entrance. Her physician told her the cause was the low state of her blood. She did not get up well after the miscarriage; the catamenia appeared six weeks after with much more

pain than on previous occasions. Five years ago her left leg became weak, and there was pain in that limb if she hit her toes while walking. Two years ago the right leg began to trouble her in the same way. She formerly had sick-headaches, but not for some years lately.

Her parents were subject to sick-headaches. Her father's family were consumptive; of eleven only three lived to be thirty-seven years old. Father's parents had headache and neuralgia.

On admission the patient complains of weakness in the legs, with tingling and prickling, not much pain. Sometimes she has backache. She has a fair appetite; does not sleep well. She is low-spirited and despondent. She is not kept awake at night by pain, but by "thinking to no purpose."

The pupils and eyes acted naturally; the tongue was protracted straight, was fissured and fleshy. Sensation was natural and equal in the limbs; motion was not impaired. The patellar tendon reflex was normal; there was no ankle clonus, there was no tremor of the hands; there was a slight degree of tenderness in each groin, rather more on the right, also slight tenderness on each side over the sciatic nerves, the crests of the ilia and the sacro-iliac synchondrosis. There was no spinal tenderness. Pulse was 76, a faint murmur at the apex with the first sound. The patient was pale, anaemic in appearance, seemed to have little or no spirit nor ambition.

Subsequently the blood-corpuscles were examined. There were found to be 4,625,000 red corpuscles; 15,000 white corpuscles. Some of the red were misshapen, being budded, having an elongated shape without concavity. The number of these deformed corpuscles were much fewer than in the previous case.

Under tonics, generous feeding, rest, she gained in flesh, slept better and improved in many ways; at times she was much less despondent, but the gain in cheerfulness was not permanent.

CASE III. Miss F., age forty-two, was never strong; her family history is not good. Her father died insane, her mother is queer, for years she has not seen any one but cousins, and is weak mentally; one brother has an unbalanced mind and is "queer." The patient began to run down when about thirty-three, taking care of her mother. She complained of pain in her legs, abdomen, back and head, sometimes all over. Frequently purpuric spots appear on different parts of the body, especially the legs, during attacks of pain, also on the arms and shoulders.

Mentally the patient is peculiar. She craves attention, is rather inclined to be jealous if others seem to have more attention than herself. At home she taxed the household to wait on her. If she is not humored she lies abed and complains of pain, of weakness. It was a constant contest to get her up and to keep her about after it was evident that she needed to exert herself. She was at times moody, sulky, and had crying spells. She gained much in cheerfulness and in strength, the purpuric spots appeared less frequently, she was evidently much better until it was time for her to go home when she cried much, was less cheerful, had a diarrhoea and sore throat.

The first count of blood was made about a month after entrance, 4,920,000 red, the white at, or just below, the normal. The second count was made about four months later, 4,128,000 red, 20,009 white.

CASE IV. Miss B., age twenty-five, was never

strong, always nervous; probably overstudied in the high school; was obliged to give up studying. She had insomnia, a disagreeable feeling of heaviness in the back of her neck. She became despondent and lost her interest in things about her. She had no headache, but a sense of weight on the top of her head, she felt like screaming.

She was said to be naturally of a quiet, rather taciturn disposition: while at the asylum she preferred to lie out doors, to be by herself, did not voluntarily take part in conversation, but answered when spoken to; her memory was not good, she was negligent in regard to dress. She ate well; slept poorly, though probably more than she thought she did.

Her blood was not examined till she had been there some weeks. There were 3,880,000 red, 20,000 white corpuscles. A few of the red were crenated, a very few were irregular in shape; there were very many small globules or spheroids.

She improved somewhat and subsequently a trip by water to a warmer climate seemed to be of benefit.

CASE V. Mrs. A., age thirty-five, has been ailing for four or five years, had been running down in health for a year when her five children had whooping-cough. For three years or more she has been having nervous feelings, trouble in her head, tinnitus, backache in the lower lumbar region. At times she says she seems to take no pleasure in life, everything seems a burden to her. She is troubled much with low spirits. She has slept poorly. She showed very little of this depression and after three weeks, on account of a child's illness, she left much improved in spirits.

After eighteen months she returned very tired and with many of the old symptoms. In the interval she was much of the time better than previous to her first entrance. Red corpuscles 4,380,000, white corpuscles 10,000.

In two other cases of dyspepsia with much nervous disturbance, but with less depression of spirits than in those just reported, and no other special mental disturbance, a count of the blood gave, in one case, 5,260,000 red and the white below normal, and both red and white rather small in size. The other case gave 5,080,000 red, 30,000 white, a very few of the red showed budded processes. In some cases of simple nervous exhaustion or of headache I have found no change in the condition of the blood as shown by the numbers and shape of the corpuscles.

DR. OSCAR LIEBREICH'S IMPROVED METHOD AND INSTRUMENTS FOR THE EXAMINATION OF THE SKIN, ESPECIALLY IN LUPUS.

BY ARTHUR F. CHADBOURNE, M.D.

A NEW method for detecting and accurately determining the distribution of the so-called "latent lupus," that is, where the process is covered and hidden by an apparently normal epidermis, — was described by Dr. Liebreich in the *Therapeutische Monatsschrift*, for March, 1891. Continued use has proved its accuracy and value, and Dr. Liebreich has most kindly allowed me to describe the method, as now used by him, and to add to it an account of his improved phaneroscope, of which no description has yet been published.

In studying the effects of sodium cantharidinate on lupus of the skin it was often found necessary to wait

several weeks before the superficial growth surely showed the results of treatment, for all changes whether good or bad, begin in the hidden peripheral zone. Even after recovery seems complete, isolated latent nodules may persist here and there, and many cases of "cure" have been reported by different observers, in which the subsequent history showed that the so-called "cure" was undoubtedly only a change to a latent condition, that could not be detected by the ordinary methods of examination. Fortunately the translucency of the skin makes it possible to see abnormal changes in these deeper layers when they are properly illuminated. In almost all parts of the body direct lighting from the side opposite the observer is impossible; but even when this can be done, the thickness of the tissues between the abnormal process and the light, deflects the light rays to such a degree that they cross each other in the superficial layers of the skin, blurring and obscuring everything beneath, and preventing the sharp contrast which is absolutely necessary for the easy recognition of the latent growth. To be of practical value, therefore, the light must be reflected from just beneath the level to be examined, and must pass through and illuminate it before reaching the eye of the observer.

For this purpose Dr. Liebreich has invented the phaneroscope (to be described farther on) but his method can be illustrated, and fairly good results obtained with an ordinary reading lens of about two inches focus and from two to three inches diameter. If the lens is held so that the rays of light from a lamp are brought to a focus a little beneath the surface of the skin, there will be a central, brilliant point of light, and around it a somewhat opaque pink "halo," the latter caused by the rays reflected from the point of focus, which, in returning, diverge and illuminate a much wider circle of overlying skin. If the normal skin, in the neighborhood of a patch of lupus, is first examined, and the lens then moved along parallel with the surface until it is over the typical lupus growth; there is first a widening of the "halo" on the side nearest the lupus, and at a point where the skin seems perfectly healthy; as the more infiltrated tissue is reached this "halo" steadily grows broader, and when the lens is directly over the typical portion of the growth, has become a much lighter pink, glowing circle, two or three times wider than in the normal skin, and much more brilliantly lighted. By approaching the centre along lines radiating from it, the distribution of the disease can be accurately mapped out, and the area will be considerably larger than that found by simple inspection and touch, owing to the addition of the hidden peripheral zone of latent lupus. In this way small detached "islands" of the latent growth are often found, which will probably develop later into typical patches of the disease. A steady and gradual diminution in the width of the "halo," and a darkening of its pink tint show a decrease in the activity of the process and vice versa.

At first Dr. Liebreich used the lens and lamp, but the examination is much more accurate and more easily made with his improved phaneroscope (Fig. 1). In this instrument a small incandescent electric lamp (D) is attached at right angles to a handle (B), through which run wires (C C'), connecting the lamp with a battery. On the upper side of the handle is a switch (A), by which the current can be turned off or on. The incandescent burner is covered by a tube (G),

which holds an ordinary condensing system of two plano-convex lenses (I J) of forty millimetres focus. A second tube (K), ending in a conical tip, with an opening two millimetres wide at its apex, fits over, and can be moved up or down on the lens tube, thus making the focus of the cone of light-rays project the desired distance beyond the tube. By making the focal point project about one and a half or two millimetres beyond the tube, any change in the normal translucency must cause a corresponding variation in the tint of the part of the skin, which is illuminated by the light reflected from beneath it, and as all unnecessary light is cut off by the tubes (G and K), this variation will be much more easily seen than with the combination of direct and reflected light from an ordinary lens. A very important point is that *only the minimum of light necessary for clear definition* should be used.

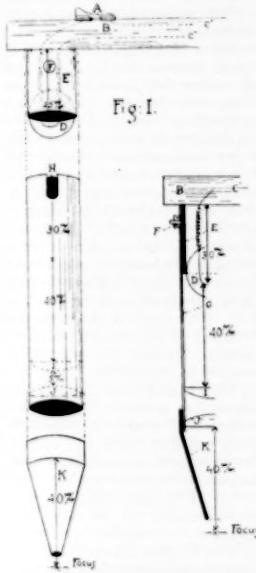


Fig. I.

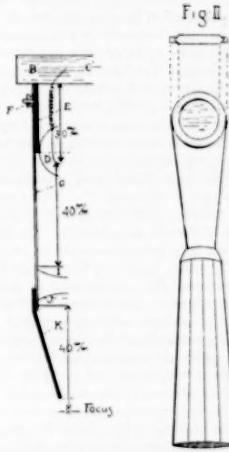


Fig. II.

tory results; and the improvement, though slow,¹ is a steadily progressive one. The "reaction" is never more than slight, and the injections are almost painless. In only a few instances has there been albuminuria, and this has always disappeared within a few hours, so that the treatment could be continued. When pain, severe subjective symptoms or signs of renal irritation follow the use of sodium cantharidinate, the fault must therefore be in the dose or solution used. Dr. Liebreich usually gives subcutaneously 0.0002*i.l.*, and this is repeated from two to three times each week. In all his cases "the process has been arrested and no nodules have developed, which had not been found in the latent condition before the treatment was begun." During the three months that I have spent in his laboratory, Dr. Liebreich has frequently shown me the patients under treatment. Owing to other work I have not been able to follow them carefully, but in every case the process is decidedly less extensive than when I first saw it, and I can recall no case in which there has been even a temporary relapse. From his experiments on animals he believes "that sodium cantharidinate alone will not be sufficient to completely cure a case of tuberculosis," but he is "now combining the 'serum therapy' with other drugs, so that not serum alone shall be brought in contact with the germs, but a serum which shall carry with it a substance capable of destroying the bacteria. This view is strengthened by Henning's pamphlet on Serum-Therapy,² which has just been published."

ORIGIN OF THE RED BLOOD-CORPUSCLES.³

BY CHARLES LOUIS MIX, A.M.
(Concluded from No. 11, page 258.)

III. ERYTHROBLAST THEORY.

In November, 1868, Neumann⁴ and Bizzozero⁵ working independently, discovered almost simultaneously in the marrow of bones certain nucleated haemoglobin-bearing cells which were of the size of white blood-corpuscles, with relatively large nuclei, and which possessed a protoplasm not a hair's breadth different, as Rindfuss⁶ expresses it, from the protoplasm of a red blood-corpuscle in either color, consistency or refrangibility; and both writers declared them to be transitions between colorless cells and red corpuscles. Since that time the primary colorless cells from which the haemoglobin-bearing cells originate, have been named "erythroblasts," by Löwit,⁷ and the term, being a useful one, has persisted. For convenience, I shall extend Löwit's use of the word to include the haemoglobin-bearing cells. Using the term

¹ Read at a physiological conference in the Harvard Medical School, January 4, 1892.

² E. Neumann: "Über die Bedeutung des Knochenmarkes für die Blutzellen." Preliminary notice, Centralbl. f. d. med. Wissen., Oct. 10, 1868; full article, Archiv. d. Heilkunde, Bd. x, 1868, pp. 68-102.

³ In an article entitled "Knochenmark und Blutkörperchen," Archiv. f. mikr. Anat., Bd. xi, p. 193, Neumann lays claim to the whole field of discovery, and his claim should doubtless be allowed to stand, to some extent.

⁴ Bizzozero: "Sulla funzione ématopoietica del midollo delle case." Gazzetta medica Italiana-Lombardia, Nov., 1868. See also, Centralbl. f. d. med. Wissen., I-68, p. 885, 1869, p. 149.

⁵ Rindfuss: "Ueber die Niederschlags- und zerfall weisser Blutkörperchen." Sitzungsber. d. k. Akad. d. Wiss., Bd. 92, III Abth., pp. 22-141.

⁶ Löwit: "Der Kurze halber werde ich diese Zellen, die zur Neubildung rother Blutkörperchen in uniglobular Beziehung stehen, als Erythroblasten bezeichnen." Page 56 of the above article.

⁷ Improvement is not expected much before the 100th injection.

² Henning: "Wesen und Werth der Liebreichsche Serum-therapie," Leipzig, 1892.

To distinguish hyperæmia from blood which has escaped from the vessels into the surrounding tissues, Dr. Liebreich uses, what he calls, a "glass pressor": a small plate of flat glass held in a light handle (Fig. 2). By looking through the glass one can see the changes that take place while the pressure is being made, as it is not necessary to remove the "pressor" to see the skin beneath it.

The value of an examination made in the way just described, is not confined to lupus, but is useful in the diagnosis of all conditions involving hyperæmia, hypertrophy, pigmentation or haemorrhage of the skin, and has been an especial help in the recognition of crystallous tissue.

The cases of lupus treated by Dr. Liebreich with cantharidinate of sodium have all given most satisfa-

in its extended sense, erythroblasts have also been found in the spleen and lymphatic system in cases after very severe bleeding.

In order that an erythroblast, after acquiring haemoglobin, may develop into an ordinary red corpuscle, two things are necessary: (1) it must lose its nucleus, and (2) it must become a biconcave disc. The great question is — "How?"

There have been three theories for the loss of the nucleus, that of Malassez, which for convenience is now given second, being chronologically last.

Neumann²³ supposed that erythroblasts lost their nuclei by absorption preceded by fragmentation. He gave descriptions of the first stages of the process showing the nucleus notched and indented, and also of the final stages, showing a last fragment still remaining in the cell. He took for granted an intermediate series connecting the extremes, but was unable to show any preparations. This absorption theory was an old one advanced by Kölliker²⁴ to explain how certain embryonic nucleated cells of the blood of the liver became non-nucleated red corpuscles; but he was forced to confess that he could not follow out the process of an entire absorption. It is for lack of histological proofs, therefore, that the Neumann-Kölliker theory failed.

The absorption theory has also been ingeniously disproved in another way by Malassez. He shows that in some cases where the erythroblasts are relatively very much larger than the red corpuscles, that one erythroblast would make a corpuscle from four to twenty times too large, by the simple absorption of its nucleus. In an erythroblast from a kid, the shell of protoplasm surrounding the nucleus varies in thickness from .375 μ . to .750 μ . at any point; and its volume, obtained by finding the total volume of the erythroblast and then subtracting the volume of the nucleus, varies from 25.2 cu. μ . to 127.3 cu. μ . But the volume of a corpuscle from a kid contains only 6.38 cu. μ . Hence one erythroblast would give rise to a corpuscle from four to twenty times too large.

(2) Influenced largely by this calculation, Malassez²⁵ advanced a new theory, that of budding. He supposed the protoplasm of the erythroblast to give off buds just as do yeast-cells, the buds being constricted off when they have reached the volume of the corpuscle which they are destined to form. They are roughly spherical at first, but become, after separation from the erythroblast, biconcave, by being flattened in the circulating blood by contact with other globules, something as the shingle on a well-washed beach,²⁶ and also by a slight loss of water. Malassez's chief argument in favor of his theory is that the buds always correspond closely in volume to the red corpuscles, and that their size is never influenced by that of the erythroblast from which they develop. For example, in the kid the erythroblasts are much larger than the corpuscles; hence the buds are relatively small. In the rabbit, however, the erythroblasts are only a little larger than the corpuscles, hence the buds are as large as the

²³ E. Neumann: *Über die Bedeutung des Knochenmarkes für die Blutbildung. Ein Beitrag zur Entwicklungsgeschichte der Blutzellen.* Archiv. der Heilkunde, Bd. x, pp. 68-102.

²⁴ A. Kölliker: *Zeitschrift für rationelle Medizin.* Bd. iv, p. 112, 1846.

²⁵ L. Malassez: *Sur l'origine et la formation des globules rouges dans la moelle des os.* Arch. de Phys. norm. et path., vol. ix, p. 21.

²⁶ L. Malassez: *Arch. de Phys. norm. et path.*, vol. ix, p. 21. Il se passe peut-être pour les globules circulant quelque chose d'analogique à ce qui se passe pour les galées de la mer, qui, attirées par le poulard et agitant sansesse pour faire leur exercice, réussissent par s'user sur deux de leurs faces opposées, par devenir plates."

erythroblasts themselves. In all cases the bud is a sphere of such a volume that when compressed its diameter will equal that of the biconcave discs.

(3) Rindfleisch,²⁷ shortly before Malassez's paper appeared, advanced his theory of the extrusion of the nucleus; and in a recent paper Dr. Howell²⁸ supports him. Rindfleisch gave figures showing that the nucleus is forced out of the cell, and stated that it is extruded, surrounded by a protoplasmic film, leaving a bell-shaped shell of protoplasm behind which develops into a red corpuscle. Dr. Howell has been able to show numerous cases in which the nucleus is extruded, and claims that in no less than three cases he saw in part the actual extrusion take place in living cells. He, however, differs from Rindfleisch in one important point: he says the nucleus is extruded absolutely devoid of protoplasm as far as he could discover, using his highest magnifying powers.

While experimenting upon cats, Dr. Howell came upon an appearance which he thinks corroborates his theory. He observed in the periphery of corpuscles newly-formed after severe bleeding, a fragment of deeply-staining substance which he explains as a fragment of the extruded nucleus left behind, due to the rapid formation of corpuscles brought about by extensive losses during bleeding. Dr. H. P. Bowditch suggested that he use this fact as a means of finding the average term of life of a corpuscle, but unfortunately nothing has as yet come from the suggestion.

In regard to these three theories it may be said in conclusion that the last two are essentially identical; for what is the difference whether a bud of protoplasm be constricted from a nucleus, leaving a film of protoplasm about it according to Malassez, or whether according to Rindfleisch and Howell, a nucleus with its film be constricted from a mass of protoplasm, or, as they say, "extruded"? The result is the same and the process is doubtless the same, though looked at from different standpoints. Though Dr. Howell did not see any protoplasm about the nucleus, it is doubtless present, and has been seen by enough observers to warrant the conclusion that it exists. As far as I know there is no well-authenticated, undisputed case of a free nucleus, even the parablast nuclei or merocytes having been shown to possess protoplasm. It is, therefore, probable that the extruded nuclei are invested by a thin protoplasmic film. This combined theory for the loss of the nucleus seems to be the true one.²⁹

The next question is, how do these masses of hemoglobin-bearing protoplasm become biconcave discs? At present there are two explanations offered. Rindfleisch says that they are flattened by being rolled about in the blood-stream. Malassez agrees with him and says that the process is further aided by a shrinkage caused by a slight loss of water. Dr. Howell's explanation is exceedingly sensible and equally simple. The biconcavity and flattening are produced by the loss of the nucleus from the interior.

How do the biconcave discs when formed get into circulation? Rindfleisch has a simple answer to this question, obtained by careful injection in the marrow of the ribs of a guinea-pig. In 1869, Hoyer³⁰ showed

²⁷ Rindfleisch: *Archiv. f. mikr. Anat.*, Bd. xvii, pp. 1-21.

²⁸ W. H. Howell: *Journal of Morphology.*, vol. iv, pp. 55-116.

²⁹ Malassez, as quoted by Gibson, confesses that he has seen the buds described by Malassez, but believes that they are very rarely caused chiefly by reagents, especially by cosmic acids. Dr. Howell also admits that he has seen the buds, but he regards them as daughter-cells which, by extrusion, have lost their nuclei before they are completely separated from the mother-cells.

³⁰ Hoyer: *Contribut. i. die med. Wissen.*, Bd. x, 1869, No. 17.

that the marrow is rich in arterial and venous capillaries, the former having very thin walls, the latter possessing none at all, being hardly more than lacunae between marrow cells. Ten years later, in a paper already quoted, Rindfleisch was enabled to prove the truth of Hoyer's statements by his injections. Hence it is an easy matter for new corpuscles to get into circulation. Very striking is the fact that, in the nutrient artery, the media is reduced to a single layer, the muscularis, the elastic layer being absent altogether; and that furthermore the adventitia is very thin. This may be explained by the fact that the artery enters the long bone in a direction very oblique to the long axis, the bony walls therefore serving as arterial walls. If, therefore, the latter be so much reduced, it is not surprising that the venous capillaries are without walls; and furthermore, being placed inside the bone, they hardly need them.

Neumann contradicts Hoyer and says that with careful injections a thin-walled system of venous capillaries can be demonstrated,⁴⁵ although he acknowledges that in some pathological cases it seems to be absent.⁴⁶ He says that the erythroblast, since they are capable of amoeboid motion before becoming infiltrated with hemoglobin, make their way bodily through the walls of the venous capillaries into the enlarged lumen of these vessels where they develop into red corpuscles. In support of Neumann's view, Denys⁴⁷ has shown conclusively, that, in the bones of birds, the venous capillaries possess walls and that the erythroblasts lie in cords within the enlarged lumen, the blood-plasma percolating between them. From the condition in Aves it is very natural to conclude *a priori* that the condition in Mammalia is much the same; hence Neumann's explanation of how the blood-corpuscles when formed pass into circulation is more satisfactory than Rindfleisch's.

The last question to be answered is, What is the fate of the extruded nucleus? No one, so far as I have learned, has faced this question except Dr. Howell,⁴⁸ Rindfleisch,⁴⁹ who believed in the absorption of the nucleus, did not need to answer it. Malassez⁵⁰ implies that the nucleus of the erythroblast, when stripped of most of its protoplasm by the developing bud, simply acquires more until it is ready to produce another bud. Neumann,⁵¹ Osler,⁵² and others describe free nuclei⁵³ in the marrow of the adult, and in the liver and spleen during fetal life. Dr. Howell says that these are the extruded nuclei in question, and that they are ultimately dissolved in the blood-plasma. He thinks that they may form the fibrinogen of the blood, for after bleeding, when of course the numbers of free nuclei are greatly increased, due to the rapid formation of new corpuscles, it has been found that the fibrinogen of the blood is increased sometimes one hundred per cent. This is very significant when placed beside an observation of Malassez, although so far as I know no one has put the two facts together. Malassez⁵⁴ noticed that in teasing the erythroblasts he

often broke into the nuclei, and in all cases they proved to be of a semi-fluid nature containing a stringy, fibrous substance, of which he gives figures. This might lead one to think that he had actually caused the formation of fibrin in the nuclei of these cells by contact with the needles during teasing, and so it becomes a striking confirmation of Howell's suggestion.

What is the origin of the erythroblasts? Here we once more enter upon disputed territory, the leading theories being divisible into two classes: those not concerned with the marrow, and those concerned with it. Of the first group the following are the most important:

(1) Erythroblasts arise from each other by ordinary indirect cell-division. This fact, first pointed out by Bizzozero many years ago, has received abundant confirmation since then by almost every writer upon the subject; still, though undoubtedly true, it cannot be received as a satisfactory explanation of the ultimate origin of erythroblasts.

(2) Bizzozero has advanced another theory which has received many supporters; namely, that the erythroblasts have arisen from nucleated embryonic corpuscles which during fetal life found their way into the marrow where they have since remained. Bizzozero therefore regards the erythroblast as a cell *suo generis*, entirely distinct from marrow-cells.

(3) Neumann in his first paper, as has already been said, advanced the theory that erythroblasts were merely transformed white corpuscles, but lack of histological proofs of such a transformation led to the overthrow of the theory. Neumann's observations were undoubtedly much more correct than his explanations. The series of transitions which he claims to have seen between a leucocyte and a red nucleated cell ready to become a corpuscle by loss of its nucleus, undoubtedly existed; but the cell which began the series was very likely a marrow-cell instead of a leucocyte. Curiously enough Bizzozero in his first paper advanced the theory that leucocytes develop into red corpuscles, passing through the erythroblastic stage; but both he and Neumann revoked their first opinion in consequence of the arguments raised against it.

(4) Erythroblasts have been thought by Pouchet,⁵⁵ who has been the author of many theories, to arise by an indirect process from what he calls "hyaline leucocytes," supposed to be derived from pre-existing larger cells. Just as we have fatty or pigmentary degeneration of cells, so we have in "hyaline leucocytes" a haemoglobin degeneration. As Malassez points out, there is anything but a degeneration in the erythroblasts, they being on the contrary very active in cell-division. Besides, a true leucocyte has never been seen to become impregnated with haemoglobin, much less to undergo a haemoglobin degeneration. Pouchet seems to have had scarcely any histological evidence for his hypothesis.

(5) Erythroblasts have been known to occur in the adult spleen, but only after severe hemorrhages, originating from other indifferent colorless cells. This was first shown by Bizzozero, afterwards experimentally proved by Gibson, and substantiated by Howell

⁴⁵ E. Neumann: Archiv. der Heilkunde, Bd. x, pp. 68-102.
⁴⁶ E. Neumann: Ein Fall von Leukämie mit Erkrankung des Knochenmarkes. Archiv. der Heilkunde, Bd. xi, p. 1.
⁴⁷ Denys: Gmelin's Jahrb., p. 202.
⁴⁸ W. H. Howell: Journal of Anatomy, vol. iv, p. 105.
⁴⁹ Rindfleisch: Arch. f. mikr. Anat., Bd. xvii, pp. 1-21.
⁵⁰ L. Malassez: Arch. de Phys., vol. ix, 1882, pp. 1-47.
⁵¹ E. Neumann: Arch. der Heilkunde, Bd. xv, pp. 441-476.
⁵² Osler: Cyclopedia of Medicine, New York, 1878. (Philadelphia.)
⁵³ Though these nuclei are described as free, they probably possess some protoplasm, however small in amount it may be.

⁵⁴ L. Malassez: Arch. de Physiol., vol. ix, 1882, p. 24. When one teases a preparation of marrow, "on y trouve, au milieu d'éléments

plus ou moins déformés et déchirés, de très fins filaments. . . . Quand la dissociation a été faite systématiquement, suivant un seul sens, d'avant en arrière, par exemple, presque tous les filaments ont cette même direction. . . . Il suffit suffisamment de faire tout ce processus si on arrive à faire suffisamment liquide et filante que l'entrainement qu'il y a pour les aiguilles dissociatives, seraient étrier en fils et par places rassembler en larmes ou en boules."

⁵⁵ Pouchet: De la Degénérescence Hémoglobinaire de la Moelle osseuse. Soc. de Biol., March 15, 1879; also Gaz. Médic., 1879, p. 184.

Gibson⁴⁷ excised the spleens of three dogs and in two cases found an actual decrease in the number of red corpuscles. Bizzozero says that this is to be regarded as the return of the spleen to an embryonic function, occurring only when the demand upon the marrow for corpuscles exceeds the possible supply, as after severe bleeding. Very interesting is the additional fact that when part of the spleen is excised, the newly growing portion develops erythroblasts as it did during its formation in the embryo. Löwit⁴⁸ thinks that the spleen and lymphatic glands are constantly preparing colorless erythroblasts, destined to acquire hemoglobin, and, by the loss of the nucleus, to develop into red corpuscles. No one seems disposed to agree with him in regarding the spleen as normally forming erythroblasts in the adult.

(6) Erythroblasts occur in the lymphatic glands, though where they come from is not known. We are indebted for the knowledge of this fact to Gibson, who ligatured the thoracic duct of a dog thirty-seven days before the animal was killed, it having gained five decagrams in the meantime. Post-mortem examination showed erythroblasts present in the left axillary glands and especially in the abdominal ganglia, there being only a few in the right axilla. A calculation of the numbers of red corpuscles before death showed a loss of thirteen per cent. Furthermore in the marrow-cavity in the shafts of both humerus and femur there had been an extension of the marrow, thus indicating that, since the lymphatic system had been unable to furnish its quota to the sum total of the blood, due to the ligature about the thoracic duct, the hematopoietic function ordinarily performed by the lymphatic ganglia had been imposed upon the marrow. Löwit also regards the lymphatic system as a normal source of erythroblasts.

It is in the marrow, however, in which most to-day agree that erythroblasts normally originate. There are to be found in the marrow in addition to the three elements of the blood, red and white corpuscles and blood-plates, the following sorts of cells:

(1) Certain colorless cells, which possess granular nuclei with no definite nucleoli, and which are exactly like red nucleated corpuscles before they have lost their nuclei in everything except the possession of hemoglobin. These cells are the erythroblasts of Löwit.

(2) Haemoglobin-bearing cells, which are just on the point of losing their nuclei by extrusion and which develop immediately into red biconcave discs.

(3) Wandering-cells or leucocytes, numbering nearly one-half the total number of cells found in the young marrow.

(4) Giant-cells, which are of two sorts, one possessing an elongated and nodulated nucleus, described very well by Bizzozero as the cells with the "budding nuclei"; the other possessing a number of nuclei, described by Robin under the name of "myeloplasa," and participating largely in the destruction of bone during the bone-making process. It is not probable that the first sort ever develops into the second.

(5) Free nuclei, described by Neumann as occurring in the liver, and by Oeler and Obrastzow as occurring

also in the marrow, regarded by Dr. Howell as the extruded nuclei of erythroblasts.

(6) Ordinary marrow-cells, possessing a slightly granular protoplasm containing an oval or sometimes rounded nucleus, and a nucleolus. Another sort has been described as being coarsely granular, staining deeply with eosin, and possessing a nucleus with one or more nucleoli.

(7) Fat-cells, found in older marrow. From all of these cells, except the fat-cells, it has been supposed that erythroblast may develop, but the weight of evidence seems to be in favor of ordinary marrow-cells as the true source.

Many theories have already been given attempting to show that erythroblasts arise from leucocytes. One of the first was Küller's, and it was followed in 1868 by Neumann's and Bizzozero's. None of these writers make use of the term "erythroblasts," yet they have described them as occurring in their series of transitions. Pouchet's theory that certain hyaline leucocytes found in the marrow developed into red corpuscles, after passing through the erythroblastic stage, has been mentioned.

Foa and Salvioli⁴⁹ state that the giant-cells with the "budding nuclei" of Bizzozero give rise to colorless erythroblasts by a process of constriction, the erythroblasts then becoming colored with haemoglobin and forming corpuscles. They call these giant-cells "hematoblasts." Rindfleisch⁵⁰ believes that the giant-cells by a series of transitional forms pass to the red corpuscles through an erythroblastic stage, although he does not, of course, call it by that name.

Oeler⁵¹ and Obrastzow⁵² believe that the naked nuclei of the marrow do not dissolve in the blood plasma as Dr. Howell suggests, and that they are not extruded nuclei of erythroblasts, but that on the contrary they develop into them by first becoming surrounded with protoplasm, which is then infiltrated with hemoglobin, thus giving rise to red blood-corpuscles by the subsequent loss of the nucleus. The theory is not well supported.

Malassez,⁵³ Howell⁵⁴ and Gibson⁵⁵ all unite in believing that erythroblasts develop from ordinary marrow-cells. Until 1890 not all the stages had been satisfactorily shown, but during that year Dr. Howell gave additional evidence of the truth of the theory. Malassez does not give a clear account of the origin of the erythroblasts which he names "protohaemoblasts,"⁵⁶ contenting himself by saying simply that the latter arise directly from undifferentiated marrow-cells. According to Dr. Howell the marrow-cell first develops into a cell, which is the exact counterpart of a nucleated red corpuscle, but which possesses no hemoglobin, thus corresponding to Löwit's erythroblast. This then acquires haemoglobin, and after passing through an unknown number of generations, during which time there is a gradual change in the nucleus preparing it for the fate awaiting it, the cell becomes fully matured, and loses its nucleus by extrusion, thus developing into a true corpuscle. Of all the theories

⁴⁷ J. L. Gibson: The Blood-forming Organs and Blood-formation. An Experimental Research, Journal of Anatomy and Physiology, vol. xx, 1885, pp. 100-113, 324-335, 456-474, 674-691.

⁴⁸ M. Löwit: Ueber die Bildung rother und weisser Blutkörperchen, Sitzungsber. d. Kais. Akad. d. Wissen., Bd. 88, III Abth., pp. 356-399.

⁴⁹ Foa and Salvioli: Arch. p. 1. Scienz. med., 1880, vol. iv, p. 1.

⁵⁰ Rindfleisch: Arch. f. mikr. Anat., Bd. xvii, 1880, p. 27.

⁵¹ Oeler: Medical News (Philadelphia), 1886. Cartwright Lectures.

⁵² Obrastzow: Arch. f. path. Anat. und Physiol. und für clin. Med. (Virchow), Bd. 84, 1881, p. 335.

⁵³ Malassez: Arch. de Phys., vol. ix, 1882, p. 36.

⁵⁴ W. H. Howell: Journal of Morphology, vol. iv, p. 90.

⁵⁵ J. L. Gibson: Journal of Anatomy and Physiology, vol. xx, p. 456.

⁵⁶ L. Malassez: Op. cit., p. 35.

which have been advanced for the origin of the erythroblast, the last is undoubtedly supported by the best histological evidence.

As the question of the origin of the red corpuscles of the adult now stands, there are only two theories which can claim to be at all established, Schäfer's Vaso-formative theory and the Erythroblast theory. Unfortunately the former is active only a short time after birth, so that it cannot be given as a sufficient explanation. The erythroblast theory rests on excellent evidence, is a sufficient explanation, but unfortunately exists in so many variations that many are disposed to doubt its truthfulness altogether. Whoever will undertake, however, to run over all the many theories from Neumann's time to the present day, can hardly fail to see that, although stated in so many forms, they yet reduce to one, which in brief seems to be as follows: An indifferent marrow-cell with its granular protoplasm, nucleus and one or more nucleoli, by a series of cell-divisions, develops into a nucleated colorless cell, which by an amoeboid motion makes its way into the lumen of a venous capillary. Here it acquires hemoglobin, and passes through a series of changes fitting it for the loss of its nucleus which takes place by extrusion. After the loss of the nucleus, the plastid, no longer a true cell, collapses, and is transformed into a biconcave disc or red blood-corpuscle, which passes out of the marrow-cavity into general circulation.

Clinical Department.

A CASE OF IMPERFORATE RECTUM.

BY W. M. CONANT, M.D.

WHEN making the visit Sunday, May 31, 1891, at the Massachusetts General Hospital, for Dr. Homans, I found a male babe, three days old, that had passed no feces since birth. The child had vomited frequently. The urine was passed freely, clear, and not tinged with meconium. Temperature at time of entrance 100°, pulse 100.

Examination showed the child to be much jaundiced. General condition fair, with pulse of good strength. Abdomen much distended, so that the veins could easily be seen. No anus present, not even a dimple to mark the accustomed spot. A doubtful impulse was felt in region of anus on pressure upon the abdomen.

The child was seen in consultation by Drs. Beach and Mixter, and it was decided best to operate.

Operation, under ether. Drs. Beach, Mixer and A. Coolidge, Jr., present. An incision was made from the middle of the perineum to tip of coccyx, and was carried to the depth of one and a half inches. Even then there was no impulse to be felt either by Dr. Beach or myself. A small trocar was plunged into the region of the rectum, but nothing was obtained. It was decided that it was not wise to deepen the incision, and on consultation it was thought best to do a laparotomy.

An incision two and a half inches long was made in the left linea semilunaris. Some ascitic fluid was found on opening the abdominal cavity. On inserting the finger the distended bowel was detected, extending toward the perineal incision. It seemed to be about a quarter of an inch from the perineal incision, and sep-

arated from it by a diaphragmatic membrane which shut off the abdominal from the pelvic cavity. Then it occurred to me that it might be possible to pass a trocar through the perineal wound into the gut. This I was able to do by using one finger in the abdominal cavity as a guide. The point of the trocar held in the other hand was directed as far back as possible and then entered the bowel from behind without opening the peritoneal cavity. A good-sized trocar was passed into the gut, and five ounces of meconium passed through the canula. The abdominal wound was closed with silk sutures. The canula was left in perineal wound, being fastened in with adhesive plaster. The child stood the operation well, and slept in the afternoon. He took and retained milk and water when awake. Feces passed readily through the canula, and the child was very comfortable in the evening.

Through the kindness of Drs. Homans and Cabot, I was permitted to have the subsequent care of the case.

June 4th, three days after the operation, the canula was removed and a rubber tube fastened into the wound.

June 15th, two weeks after the operation, the child had gained a pound in weight, now weighs seven pounds. Abdominal wound healed.

June 30th. Several times in last two weeks the anus has been dilated, and to day a fresh tube was inserted. Weighs seven pounds. The abdomen bulges a little at cicatrix, due to the thinning of the entire abdominal wall.

July 15th, six weeks after the operation, child still weighs seven pounds. Food does not agree with him at this time.

July 31st. Anus stretched and a mass of faecal impaction dug out. Has lost one pound in weight. Several different foods were tried, and it was found that half barley-water and milk agreed best with the child.

The child remained in this condition, sometimes losing, sometimes gaining, in weight, until the last of August, and then, during a few days of extreme heat, he had an attack of enterocolitis, and died.

The entire subject cannot be covered in a paper of this character, but a consideration of the more important points may be of value.

In the embryo a cloaca exists until after the fifth week, and the genital eminence makes its appearance in the course of the sixth week in front of, and within, the cloaca. In the seventh week this is divided into two parts, just how this takes place is not known. The process is connected with the formation of the urogenital cord as an independent structure, and results in the division of the cloaca into a dorsal or anal, and a ventral part. In the tenth week a transverse integumental band completes the division. Of the two openings the dorsal one or anus is of small size and is surrounded by a small, circular, integumental ridge.

It follows, therefore, that there may be several different forms of imperforate rectum or anus, namely:

- (1) The anus may be partially closed.
- (2) The anus may be completely closed.
- (3) The anus is closed, but there is an opening into bladder, urethra or vagina.
- (4) Anus and rectum imperforate.
- (5) Anus in natural position, but rectum wanting for a short or long distance.

The anatomy of the rectum of the infant has been but little studied judging from the small amount of literature on the subject. I have measured a few babes

at term at the Harvard Medical School, and have found the antero-posterior and lateral diameter, from the tip of the coccyx to symphysis on each, about an inch. The distance from the anus to the brim of the true pelvis is a little less than two inches. One interesting thing that I noticed was that about two inches up the rectal wall there was a sharp falciform edge felt as if the rectum was flexed at that point. This I have also felt on several babes a few months old. How much weight, if any, ought to be attached to this point I am unable to state.

The prognosis of these cases, except the simplest forms, is very unfavorable.

Cripps has tabulated one hundred cases of Littré's operation with five recoveries.

Holmes claims not to have met with an account of any permanently successful cases since the publication of Rochard's paper.

Geraldes, after thirty trials, had one successful case, and that died at two and a half months.

Guersant opened the colon in the groin eleven times and once in the loin, without saving a single patient.

Inflammation, visceral complications, dilatation of the bowel above with retained ingesta, insufficient assimilation and pain render a favorable result very improbable.

Treatment. — All operators agree that the indications are to establish an opening as near the natural position of the anus as possible.

The first two forms, where the anus is partially or completely closed, are easily treated by breaking down the membrane and keeping the gut patent by occasionally inserting the finger.

In the third form, where there is a fistula, several things have to be considered. Where there is a recto-vaginal fistula, the size of the child and the urgency of the case have to be considered. Most operators advise waiting until the child is several years old. When the fistula empties into the urethra or bladder, the amount of rectum wanting and the height of the communication are important points. Where there is bulging at the anus the communication is probably recto-urethral, and an attempt may be made to find the bowel. If the bowel cannot be found, Littré's operation is advised by most operators.

In the fourth and fifth forms, where, with anus perforate or imperforate, the rectum is deficient, we have the most difficult problems to solve. In these cases Jacobson mentions four points that should be remembered: (1) Rectum may end at brim of pelvis. (2) If the rectum ends lower down, it may be floating with a long meso-rectum. (3) Though the rectum may end within reach, the peritoneum may, and not infrequently does, extend low down on the bowel. (4) Even if the rectum is successfully opened high up without opening the peritoneum, fatal cellulitis may be set up by the escaping feces, or by the attempts to keep the bowels patent.

Nearly all operators advise an exploratory incision in the site of the anus, and some advise carrying this to the depth of two inches; this is the extreme limit. The majority advise an inch or an inch and a half. At this depth a small trocar or aspirating needle is advised to be inserted well toward the back: failing in this, they advise Verneuil's operation, namely, excising the coccyx, inguinal colotomy, lumbar colotomy, Littré's operation.

Verneuil's operation has been performed but seldom,

but in certain cases it seems of promise. Lumbar colotomy is not often done at present as inguinal colotomy or Littré's operation is preferred.

After having found the gut by Littré's operation, it is an interesting question to decide whether an opening should be made through the perineum. The authorities differ, but the consensus of opinion is against doing so, because it is not certainly known where the gut is or whether it is covered with peritoneum. This may be true in the usual methods of operating, but in the case just reported the end of the gut could have been found wherever it was; and the ability to direct the trocar toward the back of the pelvis was very marked. Certainly, this method enables one to know just what one is doing.

This is the first case, as far as I can learn, that has had a laparotomy performed, and then had a connection made between the gut and the perineal wound without opening the intestines from above. Certainly one case does not prove anything, but the unfavorable condition of the child before the operation, and the great relief and slight shock from the operation, has led me to report this method of operating in severe cases of imperforate rectum and anus.

Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

(Continued from No. 11, page 265.)

PIGMENTATION OF MUCOUS MEMBRANES IN "VAG-ABOND'S DISEASE."⁴

PIGMENTED spots of the mucous membrane are generally considered a characteristic and even pathognomonic sign of Addison's disease. In a case of generalized pigmentation their absence is almost enough to warrant us in eliminating Addison's disease. While these diagnostic deductions are true in the immense majority of instances, the two cases reported by Thibierge, show that some modification in our statement of them is necessary. The first case was that of a man fifty-nine years old, who had fallen from a respectable position, into habits of confirmed vagabondage. A discoloration of the skin had appeared a year before, and of late there had been great pruritus of the whole body. When examined his clothing was found to be infested with pediculi, and his skin bore the marks of having been exposed to the attacks of these parasites for a long time. The upper part of the back, and the parts which were brought most closely into contact with the clothing, were covered with the characteristic linear excoriations, mingled with ecthymatos pustules. Almost the whole surface of the skin was covered with a marked pigmentation, more pronounced about the waist in front, and in the scapular and sacral regions behind. The scrotum was pigmented, but not to the degree common in Addison's disease. The mucous membrane of the mouth was the seat of numerous brown patches, irregularly distributed and sharply defined. The glans penis also showed some dark brown spots, as well as the mucous surface of the prepuce.

The second case was that of a former coachman,

* *Bulletin et mémoires de la Société des Hôpitaux de Paris, December 18, 1891.*

seventy years of age, who had led a miserable existence for two years, in great poverty. The body was pretty generally pigmented, with the addition of the other characteristic lesions of *pediculi vestimentorum*, excoriations, pustules and furuncular lesions. The face slightly pigmented; the mucous membranes of the mouth, as in the preceding case, covered with pigment spots, and the border of the lower lip with dark brown patches. Pigmentation also upon the glans.

These two cases represent well the pathological condition of the skin, to which the name "vagabond's disease" has been given, where the skin, in subjects who have been living in great misery and without sufficient nourishment, takes on a deep brown tint, resembling that seen in Addison's disease, on account of long-continued irritation from *pediculi vestimentorum*. In vagabond's disease, however, we have been accustomed to regard the mucous membranes as not affected, a marked distinction from Addison's disease. In the two cases cited, however, there was no evidence of the latter disease, and as two similar cases have been reported, one by Greenhow and the other by Besnier, Tibierge concludes that the pathognomonic value of pigmentation of the mucous membranes in Addison's disease may well be doubted.

CHRONIC RINGWORM IN AN INSTITUTION.

Dr. Dubring's experience in the treatment of chronic ringworm in an institution,⁵ illustrates once more the obstinacy of this affection, and offers valuable suggestions for its management. Ringworm had been prevalent in the institution for a number of years, and was steadily spreading in spite of the care of physicians and attendants. Forty-eight subjects, boys whose age varied from eight to twelve years, were found to be affected with ringworm of the scalp, as proved by microscopic examination. The affection was, in most instances, chronic, having existed from six months to three years, the average duration being about a year. All lived in the infirmary and had been isolated from their fellows. No reason could be found for the persistent spread of the disease, as the institution was clean, and the management and attendance most satisfactory. The nutrition of the subjects was, on an average, somewhat below par, although some few were even robust. Thirty-two of the forty-eight cases are described as bad ones with regard to their extent and chronicity. Some had been considered cured and had left the infirmary, only to return sooner or later with a recurrence of the affection. In some cases the whole scalp was more or less affected. The hairs were mostly broken off near the scalp, giving the appearance of dark or light points. The epidermis was very slightly affected, as a rule; no cases were seen where anything suggestive of *alopecia areata* was present.

The treatment, with which the paper especially deals, was conducted systematically and thoroughly.

The hair was cut short about once a week on an average. Epilation was found to be very difficult to enforce, although its advantages are conceded by the writer. In choosing the remedies, the age, complexion and general nutrition of the patient were considered. The boys of dark complexion were able to bear much stronger preparations than those with light hair.

Carbolic acid proved disappointing, although used in a large number of cases in the form of ointment, or as a mixture with olive oil and glycerine, and the

writer, from his experience in these cases, is inclined to allot it a low rank in the list of parasiticides. It could be used in full strength without causing much cutaneous disturbance. Tar was used chiefly in combination with carbolic acid or sulphur, but with no favorable results.

Iodine also, used as a tincture, or in combination with tar, was unsatisfactory in the chronic cases. Its failure to act is attributed to the fact that it is a diuretic and while the epidermis is being thrown off, there is no remedy in contact with the scalp.

The oleate of copper, and the mercurials were thoroughly tested, without giving marked results. Corrosive sublimate was not deemed a safe drug to use, in view of the large extent occupied by the disease in most of the cases.

Crotone oil did good service by its inflammatory action, being prescribed with olive oil one part to three, and in this strength proved safe and effective. After pustulation had been in this way established, mild sulphur or calomel ointments were used to control it. No unfavorable results from the oil were noted, and in general, although extensive and severe local inflammation was produced by many of the remedies tried, no case of eczema developed.

The best results were obtained from sulphur and from chrysarobin, especially from the latter. Sulphur was used as an ointment, in strength varying from one to three drachms to the ounce. It was found also to be very serviceable as a weak ointment after the stronger remedies had been applied. Various combinations of sulphur with soap, with tar ointment, and with carbolic acid were prescribed, but it was considered to be more effective when used alone.

Chrysarobin proved to be the most efficacious parasiticide employed. It was at one time or another employed upon the greater number of patients, and is spoken of with great praise. Twenty-nine cases were treated with this drug, in only seven of which was any irritation of the scalp produced. It was used in strengths varying from fifteen grains to two drachms to the ounce of ointment, the usual strength being one drachm to the ounce. In one instance it caused edema of the whole face, and in one it was applied to the whole scalp without causing excessive inflammation. Pain in the head was complained of in but one instance, while in several, the whole scalp was somewhat inflamed without causing heat or pain. In some instances the forehead and sides of the face became stained without affecting the eyes. The desquamation following the inflammation was of a peculiar nature, consisting of large, thick, papery scales. The writer concludes from his experience with these cases — which were all chronic and had been previously treated with strong remedies — that there does not seem to be much danger from chrysarobin if applied under the physician's own supervision, and if the application is sparingly made, the face avoided, and the strength gradually increased. Its exhibition always requires caution. Its efficacy is attributed to its power of destroying the fungus by penetrating the follicles. It should be used in very small quantity, and rubbed in with a small bit of cloth or a mop.

ENGLISH VIEWS OF LUPUS.⁶

The discussion on lupus, held in the Section of Medicine at the annual meeting of the British Med-

⁵ British Medical Journal, October 10, 1891.

⁶ American Journal of the Medical Sciences, February, 1892.

ical Association in Bournemouth, July, 1891, is interesting chiefly on account of the almost unanimous consensus of opinion in favor of the tuberculous nature of lupus.

The discussion was opened by Dr. Payne, whose conclusions may be quoted at length. "Lupus may be regarded as a very slow and chronic form of the tuberculous process, remaining for the most part local. It differs from other forms of tuberculous disease chiefly in its slowness, its feeble infectivity, and the paucity of tubercle bacilli. Probably for these reasons it remains commonly confined to the organ (skin) in which it originates, and often to one part of it. It is a plausible hypothesis that these differences depend on the production of a weakened virus, or on the bacillus growing in unfavorable circumstances, as compared with the conditions present in internal parts. Now the most striking difference between the skin and the internal viscera is that of temperature. The temperature of most internal organs is probably about 100° F., while a surface thermometer applied to the skin is with difficulty brought up to near 90°, and in exposed parts with free radiation the temperature of the skin is probably on an average not much over 80°. This difference will be greater if the cutaneous circulation is sluggish, and also where there is much subcutaneous fat, one function of which tissue appears to be to allow the skin to have a temperature different from that of internal organs. Furthermore, internal tuberculous lesions always give rise to some fever, which is not the case with tuberculosis of the skin, and this further heightens the contrast, so that the temperature of an external tuberculous lesion may very well be 20° lower than that of a visceral lesion. The temperature and conditions of tuberculous disease of joints would, I should imagine, be about intermediate between the two. It is known that the 'optimum' temperature for the growth of the tubercle bacillus is about 100°, and, though it has been lately shown that it will grow at lower temperatures than has been supposed, the growth, under such circumstances, appears to be slow. It has not been ascertained, so far as I know, whether cultures grown at a low temperature are actually less virulent, nor whether the ptomaines, or other chemical substances they produce, are different, but while the bacillus grows so slowly, it seems certainly probable that there would be a difference in these respects also. I conclude, then, that the skin is a poor soil for the growth of the tubercle bacillus, and that though it may persist there, its condition is not flourishing.

"Looking at the question all round, it would seem, too, as if the bacillus were not easily made to take root in the skin. Inoculated tubercle, as I have said, seems very often to die out, without penetrating further. The bacillary growth of scrofulous glands or subcutaneous nodes, when it reaches the surface, mostly dies off, only exceptionally extending along the skin and producing lupus. Lupus on the surface of the extremities, as Mr. Hutchinson remarks, and as I can affirm, often dies off spontaneously, probably from the low temperature. The face is a more favorable soil, on account of the congestions and disturbances which are caused by the special blood-supply of that region; but anywhere it seems as if the bacillus had a difficulty in establishing itself, and when it does, it passes into a slowly vegetating form of slight virulence. When lupus is inveterate, as I before re-

marked, it seems to have almost lost its infective power, rarely producing new patches, and in such a case we have a bacillus that has been cultivated for many years at a low temperature, and would, therefore, be presumably less virulent."

With regard to the mode of infection, Dr. Payne considers first the probability of a direct inoculation of the skin through a wound or otherwise, and although in most instances this mode cannot be established, he does not doubt that instances of inoculation will be multiplied in the future. The other hypothesis is that of direct inheritance. He considers that the occurrence of absolutely congenital tuberculosis in bovine animals is clearly proved, and that there are one or two cases of the same kind in the human infant. Baumgarten is regarded as having drawn his theory much too far, especially in minimizing or even denying the possibility of infection with tubercle bacilli through the breath or otherwise, and there is a difficulty also in assuming such a long period of latency as is required to explain many cases of tuberculous disease on this theory. Direct inheritance of tubercle, if established, would explain very well the origin of many cases of lupus.

Mr. Calcott Fox, who followed, declared that the identity of what has been known as scrofula of the bones, joints, glands and skin with true tuberculosis must be admitted. True lupus (as distinguished clinically from scrofuloderma) could undoubtedly arise from these scrofulous lesions. His statistics, comprising eighty hospital cases of true lupus, entirely confirmed the facts: first, that scrofulous or tuberculous lesions of the skin, bones, glands and joints frequently complicated lupus cases; and secondly, that a family history of tuberculosis was especially frequent in lupus cases.

Dr. Radcliffe Crocker said that he admitted the bacillary origin of lupus vulgaris. He had seen lupus even in infancy, and thought that it commenced much more frequently in adult life than was generally supposed, and that adult lupus was almost always of the nodular form. Mr. Clement Lucas related several cases of direct inoculation. One of these was that of an attendant or companion to a lady, who for years had suffered and eventually died from the ravages of lupus. As she dressed her mistress's sores and was constantly with her, it was highly probable that the lupus patch which she exhibited on her nose was contracted from her mistress. Another case in which lupus spread from a wound was that of a policeman, twenty-three years of age. He had received a wound on the knuckle from striking a man in the mouth with his fist, and from this an indurated, crusting, lupus patch spread over the back of his hand. Another man, rather past the middle period of life, injured his forefinger in some machinery, and afterward neglected the wound. Lupus spread all down the forefinger, and gradually over the back of his hand.

A BULLOCK was recently received in England from New South Wales, which some time ago having had one of its hind legs broken at the joint, was provided with a substitute made after the style of the ordinary wooden leg. The bullock has since been able to walk about and to eat comfortably, and has been passed by a veterinary surgeon as being free from pain.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

In Memoriam.

DAVID HUMPHREYS STORER.

BORN MARCH 27, 1804. DIED SEPTEMBER 10, 1891.

GEORGE HINCKLEY LYMAN.

BORN JULY 17, 1819. DIED AUGUST 19, 1891.

MEETING of January 20, 1892.

In the hall were hung the portrait of Dr. Storer, by Vinton, presented to the Medical Library Association three years ago by his friends in the profession, and a portrait of Dr. Lyman recently presented to the Library Association by his widow.

DR. STORER.

DR. S. L. ABBOT: It is my grateful duty at this time, Mr. Chairman, in response to your call to say a few words in commemoration of the great worth of our departed friend and associate, Dr. David Humphreys Storer. It is eminently proper that this Society should pay its tribute of respect and affection to one who was so highly honored in this community. Secluded as he was for so many of the last years of his life by bodily infirmities, from free communication with his professional brethren, a whole generation of young physicians, members of this Society, has come into active professional life without any personal knowledge of him. It is due to them, if to no others, that the story should be told of his admirable traits and his honorable, useful career.

My acquaintance with Dr. Storer dates back to the very commencement of my professional studies, when I entered as a pupil the Tremont Street Medical School in the early days of that admirable institution. The impression which he gave me at that time remained with me to the end of his life,—that of a warm-hearted, high-toned, conscientious man. There was a cordiality in the grasp of his hand which made you feel at once that he was of a sincere, sympathetic nature. No one realized this more fully than those who were so fortunate as to come under his professional care. He was a skillful, judicious physician, as I early learned from personal experience. In his relations with men he was no respecter of persons; the poor and the rich were both alike to him, and in his large practice all felt that they had the devoted care of a personal friend. He had a high sense of honor and nothing stirred his indignation more quickly than any story of meanness or dishonor. As is common with those of such an ardent temperament his impulsive nature sometimes put him in uncomfortable positions which a man of cooler temper would have avoided. I well remember one instance of this which resulted from his action at a meeting of the Counsellors of the Massachusetts Medical Society, years ago, which had much to do with the expulsion of an unworthy member from the Society. At that meeting, when the conduct

of the offender was under discussion, Dr. Storer took so active a part, that after the expulsion of the member, he was promptly notified that an action for damages to the amount of \$10,000 would be brought against him for defamation of character. But the doctor was not obliged to face the storm alone. The Society at once took up the case and made itself fully responsible for any pecuniary loss which might come to Dr. Storer in consequence. The suit, I believe, was never brought to trial.

Dr. Storer was always a warm friend to young physicians, and personally I was under great obligations to him in my early professional life. It was through his suggestion and influence that I obtained the position of Admitting Physician to the Massachusetts General Hospital. By the gradual expansion of the duties of that office while I held it, the Department of Out-patients grew up, which has developed into such an important addition to the charities of that noble institution, and which was followed in after years by organizations of a similar nature in other hospitals here.

Dr. Storer was a hard worker. He entered into everything which he undertook, with the greatest earnestness. Notwithstanding the pressing demands of a growing practice he found time, as a member of the Biological Commission of Massachusetts, to prepare one of its most valuable contributions to the natural history of the State in his Report on the Fishes. He prosecuted this work with the greatest enthusiasm. The field of study was at that time almost an unexplored one. I well remember the happiness which the acquisition of a hitherto undescribed species brought to him and his eagerness to exhibit it and point out its special features at a meeting of the Boston Society of Natural History. As the result of his labors, besides making a valuable contribution to the science of Ichthyology, he brought together a large amount of material relating to the economic value of our fisheries which makes his report, as a whole, unique, and still keeps it in the front rank of works of its class at the present day.

In conclusion, it is but feeble justice to the memory of Dr. Storer to say that he was a high-toned, honorable man, true to every position of trust and responsibility in which he was placed, and beloved in this community as a warm-hearted, faithful, conscientious physician.

DR. G. J. TOWNSEND, of South Natick, who was not able to be present, sent the following letter:

An uninterrupted friendship of fifty years with Dr. Storer, impels me to offer my tribute to those great qualities of mind and heart, which have endeared him to thousands of friends and patients, have commanded the respect and regard of his brethren in our profession, and have rendered him a power for good in the community, rarely equalled.

My first acquaintance with him was as his pupil, ever earnest and steadfast in the pursuit of knowledge himself, devoting himself unweariedly not only to the study of medicine, but to the collateral sciences, he was ever ready to impart his knowledge to the student, who might thus profit by the practical results of so much time and labor. Dr. Storer was by nature a teacher and to him belongs the credit of originating the Tremont Street Medical School, which, as the germ of the present curriculum of Harvard, has borne such valuable fruit. To his students he was always particularly kind, and I shall never forget his attention

to me, when stricken down in the midst of my studies, by disease of the lungs.

Of Dr. Storer's middle life, others are better qualified to speak than myself, as I saw him only occasionally in consultation, etc., living as I have, a secluded life in the country. But his wise precepts firmly engraven on my mind, have served me in good stead in many a rugged case of midwifery, in regions remote from all available aid, for competent physicians were rare in the early days of my country life. Patience and expectancy up to the proper time for interference, prompt and fearless action when that time came, were his constant instructions. My nurses sometimes tell me that I work over my obstetric cases more than many physicians. Dr. Storer always taught that the very presence of the medical attendant inspires the patient in a lingering case with courage and confidence, thus often enabling nature to terminate a case, without instrumental interference.

His elevation to the chair of obstetrics was a source of great gratification to him, coming, as he has told me, most unexpectedly, — for with characteristic modesty, he had made but little personal effort to obtain it. How successful his teachings in his enlarged sphere were, the well-filled seats in his lecture room abundantly testified.

In Dr. Storer's declining years our relations became more intimate. Passing the summer in my immediate vicinity, it was my good fortune to minister to him and his through many a trying illness. I say good fortune because he was always satisfied with any attention, showed so much confidence in my advice, and was gratified at any little service, out of all manner of proportion it often seemed to me, to its real worth.

A vesical calculus was the final cause of his death. For, though it was crushed and removed by the late Dr. Bigelow, he never entirely recovered from the subsequent cystitis. Very rarely would a word of complaint come from his lips, amidst all his sufferings, and they were many and severe. Once in a while, when in special distress, he would say, "it is confounded hard, Townsend," and I felt that it was hard, that one who had done so much to relieve the sufferings of others, should be so distressed himself.

After the death of his wife to whom he was devotedly attached, life seemed to have lost much of its attraction, but he was always cheerful and most genial to his friends. Full of years and honors, with intellect unclouded to the last, he has passed on the path that none can turn, soothed and enlivened by the devoted care and attention of his children, and hosts of friends. He has left a rare example of faithful work, devotion to duty, and of affectionate regard for his friends, of priceless value. May we all profit by it.

DR. GEORGE C. SHATTUCK wrote as follows:

Yours of the 22d, inviting me to be present at the meeting of the Suffolk District Medical Society, is at hand. My medical adviser says that it is better for me not to accept your kind invitation. My own inclination is to go, for I would gladly bear testimony to the worth and accomplishments of Dr. Storer. I knew him very well, having been his associate for many years in the Massachusetts General Hospital and in the Medical School. He, certainly, was very successful, both as a medical practitioner and as a professor. He had been diligent as a student of medicine and soon acquired a large practice. He had a love of his profession, a zeal and enthusiasm which stood him in

stead, as a practitioner and a teacher. He gained and maintained the respect and confidence of all to whom he ministered. He lived many years in retirement, but maintained his interest in his profession, and had a good and pleasant word to say to all who called on him. He has left an example of conscientious discharge of duty to all who survive him.

DR. O. W. HOLMES sent the following tribute:

I am very sorry that it will not be in my power to attend the meeting at which the memory of our professional brothers, Dr. Storer and Dr. Lyman are to be tenderly and respectfully recalled by those who best knew and who best appreciated their character and their services.

Of these two gentlemen, Dr. Storer was the one with whom I was most closely and longest associated. Soon after I established myself in Boston, an organization known as "The Tremont Medical School" was formed by the association of Dr. Jacob Bigelow, Dr. Edward Reynolds, Dr. David Humphreys Storer and myself. We were not all young, but we were all enthusiastic, sanguine, light-hearted, confident of success. Certainly I had every reason to think myself sure of doing well in connection with such colleagues as these three gentlemen — Dr. Bigelow, leading practitioner, a man of exceptional ability and acquirements, sagacious, prudent, eminently practical in all his ways, the central figure of the group; Dr. Reynolds, full of good-nature, ready to join in every forward movement, producing in the little band of teachers much the same benevolent sense of happy companionship that President Kirkland carried with him into the larger meetings of the University Instructors; and Dr. Storer, whose contagious enthusiasm never admitted for a moment that the Tremont Medical School could be anything but a success, which it eminently proved itself. It was a nursery of professors, all its teachers becoming, sooner or later, members of the Medical Faculty of the University.

In my very brief note to the Natural History Society, I mentioned the peculiar personal interest which Dr. Storer took in the students. He, more than any of his colleagues, carried out the old idea of the Hippocratic oath, which made the relation of medical teacher and pupil almost like that of father and son. The warm cordiality of his manner and the impulsive heartiness with which he entered into their plans and their feelings, kept him in nearer intimacy with the younger scholars than any of us could claim.

Of Dr. Storer's eminence in the specialty to which he was largely devoted, his fellow-practitioners can speak with authority and bear ample testimony. Of his accomplishments as a student of natural history, his accuracy as an observer, his faithful work in ichthyology he has left abundant record. He lived a long, busy, useful and honored life, and to many whom he leaves behind him the world seems colder since his warm heart ceased beating.

DR. A. D. SINCLAIR spoke feelingly as follows: We have assembled this evening to commemorate the life of the late David Humphreys Storer. I have come hither to lay a stone on the cairn to his memory. It is but a feeble expression of the regard in which I held the deceased and now cherish his memory. He was one of my earliest, most respected and beloved masters in medicine; and for a period extending over thirty-seven years, my affection for him remained unchanged. His memory is sweet to me. Dr.

Storer was trusted, honored and beloved by his own profession and the community among which he lived and worked. His patients respected and loved him and for more than half a century his was the prominent name in obstetrics in Massachusetts. Dr. Storer was, moreover, a student of natural science. His contributions to the natural history of Massachusetts will remain a monument to his memory for their accurate and lucid observations. His relations to the world were always transparent and upright. He was a hater of sham and subterfuge; an honest man, one who adorned his profession by his skill, personal dignity, manliness and worth.

DR. G. G. TARRELL said: Since I received an invitation to speak here this evening, I have sought in vain to find adequate words in which to express the feelings of esteem and affection in which I have always held Dr. David Humphreys Storer. Still less has it been possible for me to draw such a picture of his character as to convey to a stranger any idea of the man.

When, in 1862, I was taken by a friend to his house to be introduced, I approached him with that reverence, almost awe, which the newly matriculated medical student always has for the professor and practitioner, then in the very zenith of a successful career. I had heard much about him. I was prepared to respect him, but the straightforwardness of his manner made a great impression upon me, and his frank and genial ways, without a suspicion of affectation, entirely and immediately won me to him. The feeling of respect soon grew to be one of affection, which strengthened from that day until his death. At another Society in this city some description has been given of his scientific attainments. The gentlemen who have preceded me this evening, and the letters from his contemporaries which have been read, do not exaggerate the position which he held in the community. I will leave it still for others to describe many of his strongly marked characteristics. I will attempt no eulogy, nor will I attempt even a sketch, but will occupy the few moments allotted to me in brief mention of one only of the many strong points in his strong character. I refer to his robust, straightforward honesty — his sincerity and singleness of purpose — his absolute and unwavering regard for the truth. His ways were not devious. He went straight for his object, without subterfuge, and he asked the same frankness in others. For errors, for differences of opinion, and for mistakes of judgment, he had the utmost charity. For ignorance, and incompetence, even, he had only pity; but for a wilful misrepresentation, for a concealment of fact, for a partial though plausible statement of a case, he had both anger and withering contempt. And he had the courage of his convictions too. He called a spade a spade. He did not mince matters in his denunciation of untruth, or of the man who knowingly departed by ever so little from the strictest verity. This characteristic brought him occasionally into unfortunate conflict with a professional brother, to his own great grief, but it was with him a matter in which there was no compromise. The other must yield or forfeit his esteem. Yet he was a model consulting physician, giving his opinion boldly, — giving the patient the benefit of the skill on account of which he had been called, — yet doing it in such a way as to bring no discredit upon his younger brother. I know whereof I speak, for I often had occasion to invoke his aid in my younger professional days.

"Faithfully yours" was his usual phrase in signing his letters, — and fully did he keep faith with every one to whom his word was given. Sincerity of purpose was his own high ideal, and by that standard he tried all men. He was unerring in his detection of cant and hypocrisy. Codes of ethics he said were made for thieves, not for an honorable profession; and his own life, not only in its relation to his professional brothers, but with the whole world, was held up to the standard of that earliest and simplest code, "What ye would that men should do to you, do ye even so to them."

DR. A. T. CABOT: Dr. Storer's professional activity ceased before most of us here began the study of medicine. I can only speak from hearsay of his excellent qualities as a teacher, whose enthusiasm inspired his hearers.

You have heard of his professional life from those who were his personal friends during that time, but his scientific interest was not confined within the narrow limits of his profession.

Besides his activity in medicine he was a hard student of natural history, and served as curator and later as vice-president of the Boston Natural History Society. Of the quality of his scientific work you may form some idea if I quote to you the opinion of Mr. Samuel Gorman on Dr. Storer's most important ichthyological publication. Mr. Gorman, who is the assistant in charge of the department of fishes and reptiles at the Museum of Comparative Zoology in Cambridge, says: "The history of the fishes of Massachusetts is a classic in North American ichthyology that must serve as a basis for the future histories of New England fishes." This is high praise and gives us some idea of the untiring zeal of this busy practitioner who thus occupied and enriched his leisure moments.

Leaving now his achievements and coming to the man; it gives me pleasure to recall the genial, kindly presence of my old friend and to speak of those qualities that endeared him to all. He was one of the most sympathetic men I ever knew, and had a genius for cordiality that made a meeting with him an unfailing pleasure. These characteristics were mingled with such courtesy of manner and good feeling that it was easy to see whence came the love and devotion felt for Dr. Storer by his friends and old patients.

Although for many years out of practice he never lost his interest in medical matters, and was keenly alive to every advance. Many interesting talks have I had with him over the progress of abdominal surgery, and he was as much excited over the hopes and fears that ran through the medical community when Koch's material was being tried, as any student could be.

In order that his memory may remain with us I wish to offer the following resolution to be entered in our records:

WHEREAS, Dr. David Humphreys Storer, distinguished for professional and scientific attainments, and endeared to us by kindly, generous qualities of heart and mind has gone from our midst:

Resolved, that while his death has filled us with a sense of personal loss and lasting regret, still we feel that we have reason to be grateful that he was so long spared to live among us, retaining the zeal and enthusiasm of youth to a good old age, and acting as a delightful link between us and the older generations. Realizing the loss to his family and friends we extend them our truest sympathy and share their sorrow.

DR. E. G. CUTLER said: Before the Section takes action on the resolution presented by Dr. Cabot I would like to pay my last tribute of respect to the memory of my medical sponsor Dr. Storer, a genial, kindly, fatherly man for whom I had an affection equal to that of kinship.

His whole scientific and medical life has been most aptly and faithfully portrayed by a distinguished member of our Section before another Society: while the words of those of his fellow-workers and pupils who have preceded me are still echoing in your ears.

As one of the last of the many admitted to his friendship I can only speak of the few last years of his well-rounded life, when at the age of seventy-five, a time when most men say the race for them is run, I found him in the full possession of his faculties and ready to take his share of work as it might come. His interest in and his mastery of the recent medical advances, as already alluded to by Dr. Cabot, were a source of astonishment on first acquaintance and were maintained as long as any strength remained.

A marvel always of punctuality, he frequently told me that during all the long years of his professorship when he was in the midst of a large practice he was never absent from his post of duty once and was only tardy three times.

Dr. Storer was the first Medical Examiner appointed in Boston of the Mutual Benefit Life Insurance Company of New Jersey, and he remained its chief examiner and medical referee for over thirty-five years, and so regular was he in his attendance that he was seated in his accustomed chair daily as the clock ceased striking the hour of twelve.

He was idolized by his many patients and no surer way to their attention was to be obtained than to claim him as an intimate friend.

Ardent, emphatic, outspoken, free of speech, it was a constant wonder that he bore his afflictions so calmly and so patiently to the last.

In his death the young physician has lost his best friend, the profession its most loyal supporter and all of us a most noble example of what the true physician should be.

(The report of that part of the meeting relating to Dr. Lyman will appear in our next issue.)

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

REGULAR Meeting, Monday, January 4, 1892, DR. S. G. WEBBER in the chair.

DR. WM. M. CONANT read a paper on

IMPERFORATE RECTUM.¹

DR. M. H. RICHARDSON: My experience in cases of imperforate rectum or anus has been limited to three or four. In all the cases there has been, at the usual seat of the anus, at least a dimple, and in most a distinct depression. In most of the cases it has been possible to feel the bulging of the intestine above. In cases of this kind it is of course imperative, in order to save the life of the child, to give exit to the intestinal contents. We all do an operation for this purpose as a matter of routine. In my experience, however, the immediate mortality is very great, and if any con-

siderable portion of the rectum is obliterated I believe the prognosis for the future life of the child is unfavorable. I do not think that life is worth living which is dependent upon constant dilatation of a congenital stricture of the rectum. It is quite different, however, in those cases where the orifice is closed by a thin layer of skin and mucous membrane. In such it is quite practicable to stitch the mucous membrane of the rectum to the skin and to have no after-trouble from the congenital deformity. In those rare forms of congenital malformation where it is necessary to open the intestine in the groin or in the back, after the method of Littré, or by the classical operation of lumbar colotomy, recovery is even less desirable.

Dr. Conant's very brilliant case has interested me greatly, and his method in the emergency seems to me a distinct contribution to the literature of the subject. At birth, few children have the strength to survive the combined operations of laparotomy and attempts at restoring the canal from below. We get by this method, nevertheless, a most excellent idea of the congenital condition, and we are enabled thereby to operate understandingly where otherwise we should be groping about in great obscurity. I have felt the uncertainty of establishing communication between the distended rectum and the anus even in simple cases. My method has been to put in an aspirating needle of considerable size until meconium escapes, then to dilate this opening, after enlarging with the straight, probe-pointed bistoury. Once having got the finger into the rectum, the subsequent manipulations are quite simple. Where the obstruction is up more than an inch or two, it seems to me impracticable and unwise to attempt a union of the mucous membrane with the skin. Yet if this is not done, we must anticipate a chronic stricture which will require constant dilatation. Two or three such cases in my experience have proved fatal, and as I could not have an autopsy I have been unable to tell exactly the cause of death. It has occurred to me that in some cases there may have been an extravasation of meconium, possibly through a diverticulum of peritoneum, where the needle had gone through the recto-vesical pouch, and there has been extravasation. It is impossible to say, however, that this has been the case. It is much more probable that the child died from the combined shock of the congenital condition and the surgical efforts to relieve it.

An unusual form of congenital malformation came under my observation this summer in a girl six or eight months of age, who was born with a communication between the vagina and the rectum. I examined the case very carefully, and had it under observation for some weeks. There was a dimple at the place where the anus should be. Just inside the ostium vaginae there was an opening about a quarter of an inch in diameter from which the faeces escaped from time to time. The case seemed a very simple one previous to the exploration, for it was very evident, apparently, that it consisted simply of a communication between the rectum and the vagina. After etherization and exploration I found that there was apparently no uterus, that the communication led into a blind pouch somewhere in the region of the margin of the pelvis on the left. On dilating the vaginal opening sufficiently to explore, I found that the rectum or the sigmoid flexure communicated with the vagina about opposite the opening of this cul-de-sac. The condition of things

¹ See page 287 of the Journal.

could be ascertained only approximately, but there seemed to be apparently a double bowel, the one toward the left ending in a blind pouch and the other toward the right being the ordinary sigmoid flexure. The opening was found to be near the fundus of the vagina, where the os uteri should be. No uterus could be felt, nor was there any sign of a cervix or os. The rectum was obliterated from the intero-rectal fold to the anus. It was obvious that nothing could be done to relieve this condition and that the child's vagina would always have to be a part of the rectum. After dilating the vaginal opening, the child was sent home, to remain under the observation of her physician with directions to keep the opening patent by occasional dilatation.

DR. C. W. TOWNSEND said he had seen several cases of imperforate rectum in the Clinic of the Boston Lying-in Hospital, and he had found seven cases in the records of the hospital out of 5,500 cases, a proportion of a little over one-tenth of one per cent. Another case is recorded among the out-patients. Five of these cases were operated on, all at the Massachusetts General Hospital, with one recovery; two died without operation, and one was still-born. Three of these cases were operated on on the second day, including the one that recovered; two were operated on on the third day. In one case the lower end of the gut was sutured to the blind rectal pouch and the partition between the two was then incised and dilated. In all the other cases including the one case that recovered the operation consisted simply in passing a trocar and dilating.

Dr. Townsend remembered especially a case operated on by Dr. Cabot in 1886. There was a normal anus with a blind anal pouch nearly an inch deep. The lower end of the gut above could be felt through the anal pouch, and a trocar was passed giving vent to meconium. The opening was then dilated, but no more meconium appeared, and the patient died in four days. The reasons for this were clearly shown at the autopsy made by Dr. Townsend. The inner end of the anal pouch was separated from the rest of the gut by a slight fibrous cord about an inch in length. The gut above being distended, pushed down on the anal pouch so that the trocar easily pierced it. As soon as some of the meconium was evacuated the gut returned to its normal position, an inch distant from the end of the anal pouch, on which alone was the force of dilatation expended, leaving the gut above unrelieved except by a trocar puncture through which meconium escaped into the surrounding tissues.

A ninth case occurred in the obstetrical department of the Boston Dispensary. Here, when the baby was nearly moribund, Dr. Reynolds did Littré's operation, but death soon occurred.

In speaking of a projecting fold or valve in the rectum, the reader called to mind a case seen by Dr. Townsend only after death on the third day. An out-patient of the Lying-in Hospital, where all the symptoms of imperforate rectum had been present, namely, non-passage of meconium, distension and tympanites, and vomiting; on making the autopsy nothing could be found in the way of intussusception or congenital occlusion of the bowels, but a distinct valve-like fold existed about two inches from the anus, which allowed easy passage of the finger up from below but which had apparently effectually blocked the passage of faeces from above.

The kindred subject of imperforate urethra he would like to mention here merely to say he had never seen a case and none are recorded in the books of the Boston Lying-in Hospital. The externees of the hospital frequently think they have such cases, and report that no urine has been passed for twenty-four hours since birth. Of course, the observation may be defective in many of these cases, but Dr. Townsend believes that it is not a very rare thing for infants to pass water unnoticed during birth and then not to empty their bladders for twenty-four hours. He had seen cases where the meatus of the male child appeared to be lacking, having his attention called by the anxious exerne, and found that the lips of the meatus were simply stuck together, not sufficiently so, however, to prevent micturition.

Dr. Townsend had within a few days seen a young woman of twenty-one years in the Massachusetts General Hospital Out-patient Clinic, where the rectum opened out, inside the posterior commissure of the vulva, an anomaly unrecognized by the owner thereof.

DR. M. H. RICHARDSON showed some

GALL-STONES,

and reported briefly a case in which they were removed from the common duct.

Recent Literature.

Denmark: Its Medical Organization, Hygiene, and Demography, pp. 473. Copenhagen, 1891.

At the Second International Congress of Hygiene, which was held at Brussels in 1876, a series of papers was presented in the French language, upon the same subject as the present volume. This new volume (published in English) treats more completely of the sanitary progress of that country during the past fifteen years. It was prepared by a large corps of editors, many of whom are officers of the Danish government, or of the city of Copenhagen, and submitted to the recent Congress of Hygiene at London.

The first sixty pages are devoted to the medical organization of the country, civil, military and naval; forensic medicine, medical education, dentistry, pharmacy, midwifery and veterinary practice, each is treated in a brief chapter.

The chief portion of the volume is devoted to public hygiene, and the principal topics treated in this section are, general sanitary measures, such as water-supply, house ventilation and heating, lighting, sewerage, disposal of the dead (a crematory was built in 1886, but this process of disposal was soon declared illegal by the government).

Other chapters relate to food inspection, house inspection, and the hygiene of schools, factories, prisons and hospitals, poor-laws, first aid in cases of accident or sickness, nursing, quarantine and the control of infectious diseases, public baths and the abuse of alcohol.

The section upon the dwellings of the working-classes shows that much attention has been paid to this subject. The Classen Trust Fund was created at the close of the war of 1864, to give homes to people from the provinces who had taken refuge in Copenhagen. It provides 380 small tenements, one-third having single rooms and kitchen, and two-thirds hav-

ing two rooms and kitchen. The rents are very low, and the returns hardly one per cent. per annum.

Several working-men's building societies are also in successful operation, furnishing homes of two to four rooms each, both in Copenhagen and in the smaller cities. The Danish Society for the aid of the crippled and deformed is a well-organized society, established by a philanthropic clergyman in 1872. It maintains a polyclinic and a manual training-school, in which many ingenious devices are introduced to aid paralytics, single-handed persons and others in pursuing industrial employments.

The last section of the book is devoted to statistical information, including the usual matters pertaining to registration, the census of the blind, deaf and dumb, insane and imbeciles. The population of the kingdom, including that of Iceland, Greenland, and the Danish West Indies is at present nearly identical in numbers with that of Massachusetts. The increase since 1840 has been about one per cent. annually. The death-rate (1880-90) was 18.7.

Surgical Anatomy for Students. By A. MARMADUKE SHEILD, M.B., Cantab., F.R.C.S., Senior Assistant Surgeon, Aural Surgeon, and Teacher of Operative Surgery, Charing Cross Hospital. New York: D. Appleton & Company. 1891.

This book is intended for students to use with the living model, and is the substance of a series of demonstrations delivered by the author to students in course of preparation for examinations. It does not pretend to be a complete work on surgical anatomy; but considers the various anatomical regions, such as the head and face, the neck, abdomen, etc. It is reliable, and is more readable than "Holden's Landmarks." Though the book is addressed to students, it can be read with benefit by all operating surgeons. The book is filled with practical suggestions in the application of anatomy to surgical work.

Practical Intestinal Surgery. By FRED B. ROBINSON, B.S., M.D., Professor of Anatomy and Clinical Surgery, Toledo Medical College, Toledo, O. In two volumes. The Physicians' Leisure Library, Detroit, Mich.: George S. Davis. 1891.

To any one engaged in abdominal surgery the experiments recorded in these two little volumes will be of interest. They are not written in an attractive style, but are faithful presentations of much interesting work.

Hospitals and Asylums of the World: Their Origin, History, Construction, Administration, Management and Legislation. With plans of the chief medical institutions accurately drawn to a uniform scale, in addition to those of all the hospitals of London in the Jubilee year of Queen Victoria's reign. By HENRY C. BURDETT. In four volumes and portfolio. Vols. I and II: Asylums—History and Administration. London: J. & A. Churchill. 1891.

The author of this handsome and elaborate work has been engaged for twenty-five years in the administration of hospitals and kindred institutions, and during the earlier part of that period gained practical experience in every department of the work by active participation, first as a paid official, and subsequently as governor and hospital-manager. During these years his interest in the subject of hospitals has been constantly growing.

For the purpose of visiting hospitals and kindred

institutions and comparing their merits and defects, he has travelled on the continent of Europe, in this country and in the British Colonies. He was here a short time ago, not for the first time, in the interest of a national pension fund for nurses. He is known in connection with the organization of pay hospitals for the well-to-do in London and other large cities. He is the author of a number of books on hospitals and subjects connected directly or indirectly with hospital administration.

He has spent nearly twelve years in the preparation of these volumes, four in number, the first two of which—the only ones as yet received by us—deal with asylms for the insane: their history, administration and construction. The third and fourth volumes will deal with hospitals for the sick and similar institutions established for the treatment of acute diseases and accidents. The supplementary portfolio will contain many hundred plans of the principal hospitals throughout the world.

A book of this sort, undertaken largely as a labor of love by an intelligent and experienced enthusiast who has devoted so many years of work to his task, cannot fail, notwithstanding the many difficulties the subject presents, to be of great value as a standard authority upon the subjects treated. The publication of the book has been somewhat delayed in order to obtain the figures of the last United States census in regard to the insane population of this country. These figures, however, were not available when the book was sent to press, and a longer delay was deemed unadvisable as the returns from other countries were losing thereby in accuracy.

The author expresses the belief that intercommunication and co-operation amongst all those engaged in the administration of asylums and hospitals, and in the treatment of the inmates of such establishments throughout the world, would result in immeasurable benefit to all concerned. He offers his book as a contribution to this desirable end.

The press-work is admirable, reflecting the liberality of the author and the care and taste of the publishers.

Stricture of the Rectum: A Study of One Hundred and Thirty-eight Cases. Second Edition, Enlarged; pp. 48; illustrated. By CHAS. B. KELSEY, M.D. New York. 1892.

This monograph opens with a complete classification of the possible forms of this disease, and seems to be satisfactory and complete. The symptoms of the affection are concisely reviewed. The next seven pages are devoted to "diagnosis" including "physical examination." The greater part of the brochure (35 pages) is devoted to "treatment," and the work, concludes with a tabulated list of the author's operations and results. He discusses in this connection the methods of dilatation, incision; partial destruction, (that is, electrolysis, raclege, cauterization, etc.) excision, extirpation. He describes his method of operating, that of Krasko, colotomy, and ends with a few remarks on general treatment.

The book is exceedingly interesting, is well written, and is a thoroughly modern work. The author quotes somewhat extensively from Cripps and Allingham; and, with the exception of the subject of colotomy, the description of operative technique is at times somewhat abbreviated. The results shown by his tabulated cases are excellent.

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WORD-BLINDNESS.

FACTS are accumulating which prove the validity of the doctrine of partial memories connected with certain centres of the cerebrum. Each special sense is believed to register its own impressions as the condition of their being remembered, and the permanence of the memories depends on the integrity of the nervous substraction. Visual images have their seat in the occipito-angular region, auditory, in the first temporo-sphenoidal convolution. Doubtless, the memories associated with smell, taste and touch, have a similar localization in some part of the cortex.

Words, which are visual and audible signs, have a double registration, in the cortical centres, both of sight and hearing, and the recognition of an object depends on the calling into consciousness of its image in one or the other of those respective centres, that is, by the sight of the object, or by its written or spoken signs. Disease of the registering centre may destroy sets of memories connected therewith, and the written or spoken word fails to elicit recognition; we have what is called word-blindness or word-deafness.

Word-blindness is defined as the abolition more or less complete of the memory of figured signs. The subject is unable to read letters, syllables and words, the divers figured signs placed before his eyes, while he may be able perfectly to distinguish their form, outline, and general position.¹ "To read is to translate writing into words, to interpret an image. In word-blindness, this translation, this interpretation are impossible by the intermediation of the sight."

Kussmaul in 1877 was the first to describe word-blindness as a distinct entity. Wernicke had a few years before treated in a very lucid manner of word-deafness under the name of "sensorial aphasia." Guenean de Mussey in 1879, published in Galczowski's *Journal Ophthalmologique*, a remarkable paper on "asemiognosie optique" or "aphasic amblyopia," in

which he records a typical case of his own, and gives a clear description of the malady (reprinted in the fourth volume of his *Clinique Médicale*). The patient of Guenean de Mussey was able to read by retracing with an instrument or simply with the finger the letters which composed the words, "the muscular sense supplying the visual."

In 1881 Nadine Skwartzoff published a memoir in which fourteen cases — some typical and some incomplete — were published; while about the same time, Dejerine communicated to the *Société de Biologie*, of Paris, the first case which had been observed in France connected with a careful autopsy. Two cases followed by an autopsy were shortly afterward published by Chauillard and another. These were the only cases with autopsy which Charcot had before him, when in 1883, he delivered his lectures on aphasia, which form the substance of Bernard's book.

Of late years facts have been multiplying; the symptoms and pathological anatomy of sensorial aphasia are now tolerably well known. (See articles by Bastian, Ferrand, and M. Allen Starr, also Seguin's and Gray's valuable summaries in *Sajous's Annual*.) Dr. Starr, in *Brain*, July, 1890, analyzed fifty cases of sensory aphasia, in which Brocas's centre was not diseased, and found that in all, the lesion lay in the lower posterior third of the cerebrum. This writer says: "If the lesion be extensive enough to involve the cuneus, or deep enough to reach the visual tract to the cuneus as it passes beneath the angular gyrus and convexity of the occipital lobe, it will produce hemianopsia; if not, actual blindness may not accompany psychical blindness. In either case, it is found, that when things are not recognized, they cannot be named when seen." When limited in extent and strictly cortical, the lesion was found in five cases in the angular gyrus and in the inferior parietal lobule. It is here, therefore, that the visual memory pictures lie, according to this writer, and he states that in all the cases in this collection in which the lesion involved this area and in which reading was tested, there was word-blindness.²

The most recent contributions to our knowledge of the subject of psychical blindness have been made to the Paris Biological Society. At the session February 13, 1892, Dr. Charles Richet presented a dog which had been mutilated by ablation of the cortex of the *pli courbe* (angular gyrus); there was permanent abolition of the mental representation of objects. This dog, when placed in an apartment, distinguished the furniture and avoided hitting objects, but these objects awakened in him no idea, no image; as proof of this, if a rabbit were placed in the room, the dog passed to one side without paying any attention to the animal. In order that the rabbit should be recognized it was necessary that the recognition should take place by other senses than the sight, as olfaction. Thus, when the rabbit was placed under the dog's nose, the dog snapped at it. M. Richet claimed that the facts showed that in this animal, if visual perceptions persisted, the

¹ Bernard.

² Sajous's Annual, 1890.

mental representations which these perceptions awaken in the normal state were completely abolished.

At the session held January 16, 1892, an interesting case of word-blindness with agraphia, followed by an autopsy, was reported by Dr. P. Serieux. The patient was a woman, aged sixty-five years. Vision was intact, there was no hemianopsia, but the patient could not read either written or printed words. Writing under dictation, and after copy, were also as impossible as spontaneous writing. There was neither motor aphasia nor word-deafness. At the autopsy, a recent ventricular hemorrhage was found as the immediate cause of death, but the sole lesion to which could be referred the alexia and the agraphia, was an old focus of softening as large as a five-franc piece, occupying the whole of the inferior parietal lobule. The second and third frontal, the lobule of the insula, the Rolandie convolutions were intact. Serieux defines this as "a case of graphic visual amnesia, not to be confounded with agraphia from loss of the memory of the movements necessary for writing, an agraphia dependent on a lesion of the foot of the second frontal convolution."

At the same meeting, Dejerine remarked that the case of M. Serieux was just like an observation which he reported last year relative to a case of word-blindness with total agraphia due to a lesion exactly localized in the *pli courbe*. In both cases, the agraphia resulted from destruction of the optical images of letters, and the centre of these images, M. Dejerine believes to be the angular gyrus.

At the meeting of the *Société de Biologie*, February 27, 1892, the subject was continued, and Dejerine spoke "of the localization of word-blindness with integrity of the faculty of spontaneous writing and writing under dictation." The substance of his remarks was as follows: We are now able clinically to distinguish two forms of word-blindness. In the one, the word-blindness is accompanied with total agraphia. In the other, writing, spontaneous and under dictation, is conserved, while the act of copying is performed in a defective manner. The first of these forms has been designated by Wernicke under the name of cortical alexia, and the second under the name of sub-cortical alexia. The anatomical localization of the first of these forms is the angular gyrus of the left side, and the patients cannot read because their centre of the optical images of letters is destroyed.

The form of word-blindness in which spontaneous writing and writing under dictation are conserved, has not yet been anatomically localized. The clinical and psychological analysis of this form, however, tends to show that it is due, not to destruction of the optic centre of letters (*the pli courbe*), but to a lesion separating the *pli courbe* from the cortical centres of common visual memory (the occipital lobes).

Dejerine's patient was a man aged sixty-eight years, intelligent and cultivated. One day (in 1887) this man found that he no longer understood anything that he read. Dejerine, when consulted, noted the existence

of complete word-blindness with right lateral homonymous hemianopsia and hemiacromatopsia. There was also complete musical blindness, for the man, though a good musician, could not read a note of music. Spontaneous writing and writing under dictation were perfect, and as normal as in the physiological state; the act of copying, however, was very defective; the patient copied letters and words, but slowly and painfully, and on condition of having the copy incessantly before his eyes, as the outlines of the letters were all strange to him. Though afflicted with verbal and musical blindness, he could read figures and make calculations, both mentally and by writing. There was no word-deafness, no disturbance of speech, no hemiplegia, or hemianesthesia. It was quite easy in this patient to awaken in his interior vision the optical image of letters which he could no longer comprehend in the act of reading by making him trace in the air these letters with the finger.

These symptoms continued for four years, while this patient was under observation. The word-blindness did not improve. This man, who went out every day, could never read the name of the street, the signs on the shops, an advertisement, a journal, not even the letters which he himself wrote, and which were corrected by others. He continued to transact his business, till December 31, 1891, when he was attacked suddenly, and without hemiplegia, with "pronounced paraphasia and total agraphia." He had no "shock," or loss of consciousness, and preserved his comprehension of spoken language till his death, which took place suddenly January 10, 1892.

At the autopsy, two lesions were found in the left hemisphere, one old, the other recent. The recent lesion consisted in a patch of red softening occupying the inferior parietal lobule and the angular gyrus. The old lesions — yellow patches of atrophy — occupied the point of the occipital lobe, the base of the cuneus, the lingual and fusiform lobules. All these parts were diminished in volume, yellow, hard, and the optic radiations of Gratiolet appeared, under Flechsig's section, extremely atrophied. The right hemisphere was intact.

It will be seen that this is one of the most typical examples of word-blindness yet published. The old lesions affected only the posterior regions of the left hemisphere, in the cortical optic zone. These lesions explain the hemianopsia and hemiacromatopsia noted during life, and to understand the word-blindness, we must admit that the fibres connecting the centres of optical memory of the two hemispheres with the angular gyrus were altered. This man could not read because the continuity between the central terminations of the optic nerve and the angular gyrus, centre of the optical images of letters, was interrupted. Spontaneous writing and writing under dictation were normal, for the angular gyrus being intact the patient could evoke mentally the visual image of the word which he wished to write, just as in writing under dictation, the auditory centre of words could waken in the corre-

sponding angular gyrus the visual image of the word. On the other hand, the day when the angular gyrus became the seat of destructive lesion, ten days before death, the patient became suddenly and totally aphasic. After having been for four years affected with word-blindness with integrity of the faculty of spontaneous writing and writing under dictation, he became aphasic on the day when his angular gyrus was altered. This man then presented the one after the other, the two clinical forms known under the name of word-blindness, both depending on a different localization of the lesion.

EVOLUTION AND HEREDITY.

THE Cartwright Lectures for this year were delivered by Henry Fairfield Osborne, Sc.D., Professor of Biology in Columbia College, who took for his subject "Present Problems in Evolution and Heredity."¹

In the first lecture on "The Contemporary Evolution of Man," many anomalies are mentioned in connection with their possible or probable bearing upon the history of the human race. The lecture is interesting for those who have some knowledge of biology, especially in connection with the evolution of different species. The author says at the start that for the present purpose we must suppress our sentiment at the outset, and state plainly that the one interpretation of our bodily structure lies in the theory of our descent from some early member of the primate race, which may have given rise also to the living anthropoidea. From the mammalian standpoint, man is a degenerate animal. His senses are inferior in acuteness, his upright position, while giving a superior aspect, entails many disadvantages, his feet are not superior to those of many lower eocene plantigrades, his teeth are mechanically far inferior to those of the domestic cat.

If an unbiased comparative anatomist should reach this planet from Mars, he could only pass favorable comment upon the perfection of the hand and massive brain. Holding these trumps, man has been, and now is, discarding many formerly useful structures. By virtue of the hand and brain he is nevertheless the best adapted and most cosmopolitan vertebrate.

It is probable that none of our organs are absolutely static, and that the apparent halt in the development of some is merely relative. Upon proper investigation it is very difficult in many cases to determine whether an organ is actually developing or degenerating at the present time.

Variability of an organ or tendency to present individual anomalies, indicates that some change is in progress. It is a fixed principle that a part degenerating by disuse in individuals will also be found degenerating in the race. Degeneration is an extremely slow process. Both in the muscular and skeletal systems we find organs so far on the down-grade that they are mere pensioners of the body. One symptom of decline is variability, in which the organ seems to be

demonstrating its own uselessness by occasional absence. This long struggle of the destructive power of degeneration, which is essentially an adaptive factor against the protective power of heredity, is the most striking feature of the law of repetition. A careful study of our developing, degenerating, rudimentary and reversional organs amply demonstrates that man is now in a state of evolution hardly less rapid, the author believes, than that which has produced the modern horse from his small five-toed ancestor.

MEDICAL NOTES.

REGULATING PRESCRIPTION BLANKS.—A curious bill has been introduced in the New York Legislature, which proposes to make it compulsory for physicians to use for their prescriptions, blank forms to be supplied by the Board of Health. There seems to be very little danger that this bill will become a law.

YELLOW FEVER IN RIO JANEIRO.—During the first two weeks of March there were 775 deaths from yellow fever in Rio Janeiro. The crews of many vessels in port have been attacked with the disease. Cases have also been reported from Buenos Ayres.

CHOLERA IN ASIA MINOR DURING THE PAST YEAR.—The outbreak of cholera was first noticed near Aleppo on June 9th, and remained until November 9th, during which time 1,659 persons died. In Damascus, between October 15th and the 7th of January, 801 died. In the Hedjaz, 3,176 persons, or over two per cent. of the population, died in six weeks, in the middle of the summer. In Mecca, the mortality was three per cent. Between July and January there were probably about 10,000 deaths from cholera in Asiatic Turkey.

A PLEA FOR MRS. OSBORNE.—The *British Medical Journal* presents a plea for Mrs. Osborne, who has recently been sentenced to a term of nine months' imprisonment for stealing Mrs. Hargreaves's jewels. Letters have been written by various medical men showing that she is chronically subject to hystero-epilepsy and of a highly neurotic temperament, to such an extent that she could hardly be considered as morally responsible.

THE CUBAN DEGREE OF M.D.—The Spanish Minister of Foreign Affairs has proposed to take away the power of the University in Havana to grant the degree of M.D., thus reducing it to the position occupied by other Spanish Provincial Faculties which can only grant a license. A large petition has been sent begging that the Government will reconsider the proposal.

MEETINGS OF CONGRESSES IN EUROPE.—The sixth meeting of the French Congress of Surgery will be held in Paris on April 18th. The German Surgical Society will hold its Twenty-first Congress at Berlin, from June 8th to 11th. The question of "The

¹ Medical Record, February 20th.

"Surgical Significance of the New Firearms" will be discussed, and there will be a debate on anesthetics. The Congress of Criminal Anthropology will hold its third meeting at Brussels on August 28th. The International Congress of Experimental Psychology will meet in London on August 1st.

ANTISEPTIC TABLETS. — Attention has been called in England to the danger of putting up poisonous antiseptics in tablets of the same shape as those commonly used for internal medication. A good suggestion is made that such tablets should not only be colored, but that they should be made of a peculiar shape.

THE KOCH INSTITUTE. — Dr. Pfeiffer has published an account of the first year's work of this Institute. Almost all of the infective diseases have received more or less attention. There are two directors of departments and four assistants beside a number of volunteer workers. In the scientific department there is accommodation for twenty-five, all of whom receive appliances and attendance free of cost. All who work at the Institute are required to sign an agreement that any work which they may do shall be considered the property of the Institute, and that all discoveries shall be communicated to the directors; their notes also are the property of the institution. A weekly conference is held, in which all work of any importance is discussed. The connection between the hospital and the scientific department is a very intimate one.

THE NEXT GERMAN WAR. — At a recent meeting of the Reichstag, with reference to Billroth's lecture upon modern firearms, Major Gaede said that there was no doubt that in the next war, the number of wounded would be greater than heretofore, but the wounds would be of a less serious character. In the war of 1870 the number of wounded was about fifteen per cent. of the total number in the field, of whom a little more than two per cent. died at once. The present calculation of the next war is that twenty per cent. will be wounded, five-sixths of which number will come under surgical care. Each surgeon would have charge of about twelve seriously wounded men and twenty-six with slighter wounds. Professor Virchow said that although twenty per cent. would represent the average loss, the losses in many of the engagements would be much above the general average of the campaign. He recommended that the government should not rely entirely upon its military surgeons, but that it should establish some system by which civilian aid could be used.

BOSTON AND NEW ENGLAND.

BOSTON SOCIETY FOR PROTECTION FROM CRUELTY TO CHILDREN. — The annual report of this society shows that during the past year 4,700 children have come under its notice. The work of the society is much impeded by lack of necessary funds.

DEATHS IN BOSTON DURING THE WEEK. — The number of deaths reported during the past week was

223 against 170 the corresponding week of last year, making the death-rate for the week 25.2. The deaths due to consumption were 26, pneumonia 35. The number of persons over sixty years of age, 49. Two deaths were reported as due to influenza.

SEA-SHORE HOME FOR INFANTS. — This institution, which for several summers has done very successful work in the care of infants suffering from gastro-intestinal catarrh, in Winthrop, was a year ago not allowed to open, by vote of the Winthrop town meeting. The officers have now purchased thirteen acres of land on Weymouth Fore River, in Quincy, and will soon begin to erect buildings upon it. The new situation is decidedly better than the old one, and can be very easily reached by the Old Colony Railroad. It will probably be in working order before the continued hot weather of next summer.

TYPHOID FEVER AT BRADFORD ACADEMY. — On account of the appearance of four cases of typhoid fever at the Bradford Academy for girls, near Haverhill, the regular spring vacation has been begun a week earlier than usual.

MASSACHUSETTS LEGISLATURE. — The anti-cigarette bill was discussed and finally rejected by a large majority. The Judiciary Committee reported a bill regulating the use of embalming fluid in cases where persons were supposed to have come to their death by violence. A Committee on Public Reservations and Lands has listened to petitioners, that certain places in the State be set apart as public parks, and also for the establishment of a Metropolitan Park Commission. The Committee on Public Charitable Institutions has listened to the subject of the regulations of "baby farms." The same committee has reported reference to the next General Court on the report of the Commission on a State Institution for Epileptics. The Committee on Public Health reported a bill providing that every town in the State, of more than 2,000 inhabitants, shall elect a board of health by ballot at the annual town meeting or at a special meeting called for the purpose. The board is to consist of three members, for one, two, and three years respectively. Smaller towns "may" elect such a board, and if they do not, the selectmen shall act as such a board. The same committee reported inexpedient on the order allowing a town to impose the duties of a local board of health on the selectmen, so that it shall be permissive only in smaller towns.

RAILROAD ACCIDENTS IN MASSACHUSETTS. — According to the reports submitted to the railroad commissioners for the year ending September 30, 1891, the total number of accidents on the West End Street Railway was 204, of which 122 were by horse cars, and 82 by electric cars; 121 passengers were injured in getting off and on to cars, 45 persons on the street, and 38 by collisions with vehicles. The number fatally injured was 14, ten by horse cars and four by electric cars. Two accidents demonstrated that the wooden bar on electric cars, four inches above the rail,

may crawl up over and crush a person lying on the track, and cannot be considered a fender. Efforts are being made to provide suitable fenders for these cars. Accidents to passengers averaged one to 985,000 passengers carried, whereas in steam railroads they averaged one to 634,000. The percentage of horse cars in the total mileage of the company is 73 per cent, whereas the percentage of persons injured in getting on and off the horse cars was 58 per cent., of persons on the street, 67 per cent., and by collisions with vehicles, 58 per cent. The total number of passengers killed and injured by the steam railroads of the State was 134; employees injured 408, travellers at grade crossings and at stations 84, and trespassers 200. Of these accidents 269 were fatal.

NEW YORK.

THE WEEKLY MORTALITY. — The deaths reported in this city during the week ending March 12th, were 919, a decrease of two as compared with the preceding week, but 47 in excess of the mortality of the average of the corresponding week in the past five years. This represents an annual death-rate of 27.94 per 1,000 of the estimated population, against 26.51 for the average of the corresponding week for the past five years. Pneumonia caused 151 deaths, against 185 in the preceding week, and 120 for the average of the corresponding week of the past five years. Two hundred and thirty-three cases of scarlet fever, with 34 deaths, were reported against 224 cases and 37 deaths in the preceding week. There were 331 cases of measles, with 18 deaths, against 366 cases and 14 deaths in the preceding week. There were 107 cases of diphtheria, with 31 deaths, against 114 cases and 35 deaths in the preceding week. There were no deaths from small-pox, and only one new case reported, while in the previous week there was one death and nine new cases. For the first time during the present year there was no death from typhoid fever. During this week there were reported 941 births, against 1,043 in the preceding week.

TYPHUS FEVER. — There were eight deaths against two in the preceding week; but only 12 new cases were reported, while in the week previous the number was 30. Since March 12th only two or three new cases of typhus have occurred, and these have been exclusively among the attendants at the fever hospital on North Brother Island: so that it may be said that the *Massilia* outbreak is virtually at an end. On March 13th a newspaper reporter who contracted the disease while visiting the infected houses where the *Massilia* passengers were lodged, died of typhus; and on March 18th a policeman, who was on duty at the Reception Hospital, also died of it.

THE PASTEUR INSTITUTE. — Since the Pasteur Institute was opened, something over two years ago, Dr. Gibier has had about 1,500 patients, of whom about 300 have been inoculated by him. Although the building occupied, a small house in West 10th Street, is very poorly adapted for its purpose, the expenses of

conducting the institution have been very considerable, and as many of the patients treated were entirely unable to pay for the services rendered, it has been thought of late that the undertaking would have to be abandoned. It is now stated, however, that a large firm of contractors have expressed their willingness to erect a commodious building for this purpose near Central Park, and it is thought that with the improved facilities thus afforded the Institute may in time become self-supporting.

NEW YORK CANCER HOSPITAL. — The last annual report of the New York Cancer Hospital covers the fourth year of active work since the opening of the hospital. During the year 453 new patients were admitted, and there were performed 307 operations, one-third of which were capital. The two noteworthy incidents of the year were the completion of the Astor Pavilion for male patients and the opening of the Chapel of St. Elizabeth of Hungary, erected in memory of Mrs. Elizabeth H. Culum, from the property left by her to the hospital. The buildings of the hospital are therefore now all completed. During the year \$25,000 each was received from the estates of John T. Farish, Daniel B. Fayerweather and Mrs. Robert L. Stuart, and \$5,000 each from Mrs. Wm. Astor and Miss Mary Edson, for the endowment of beds.

PHILADELPHIA.

CHIEF TO BUREAU OF MEDICINE AND SURGERY IN THE NAVY. — Dr. A. L. Gihon, Medical Director United States Navy, stands next in line for promotion to the position of Chief of Bureau of Medicine and Surgery in the Navy Department at Washington. The term of the present incumbent expires at the end of this month, and it appears very probable that Dr. Gihon will receive the appointment, which will be a compliment to this city since Dr. Gihon is a native of Philadelphia, and for a period before the war held a professorship in a Medical College here. After entering the Navy as Assistant Surgeon, he did duty on board receiving-ship "Union," at the Philadelphia Navy Yard in 1850, and since then was continuously in active service until 1879, when he was commissioned Medical Director. Since 1888 he has been in charge of the Naval Hospital at Brooklyn, N. Y.

A JAPANESE LEPER. — In the last stages of the disease, has been admitted into the Philadelphia Hospital, where he is said to be in a dying condition. Much excitement has followed the discovery that he has been living for four or five years in this city, and that lately he has been working at a hotel in the capacity of assistant cook, making bread and pastry, dressing poultry and otherwise preparing food with hands disfigured and mutilated by the disease and in the ulcerating stage. The proprietor of the hotel was arrested and fined for not reporting a case of contagious disease, and will be further proceeded against for maintaining a nuisance. City councils have just authorized the erection of an isolated building of wood

for the accommodation of leper patients, of which there are two at present under treatment.

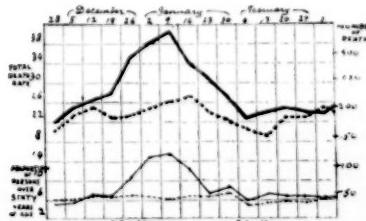
THE TROLLEY SYSTEM. — The Philadelphia County Medical Society held a special meeting on the 12th inst., to protest against the proposed introduction of the trolley system for the propulsion of street cars in this city. In spite of the opposition, which has been aroused against the overhead wires carrying heavy currents in our streets, the railway committee reported favorably upon the ordinance by an overwhelming majority, and councils will probably pass the bill which the Mayor may veto.

AN ENDOWMENT FOR A NEW MUSEUM. — The University of Pennsylvania has recently received a gift of nearly three-quarters of a million of dollars for the erection of a biological and anatomical museum to cost nearly \$200,000, and a yearly endowment of \$30,000 for its maintenance. The donor desired that his name should not be published until all the designs had been completed and the "Wistar Institute of Anatomy" founded; but it has transpired that the generous donor is General Isaac J. Wistar, of Philadelphia, whose uncle, Dr. Casper Wistar, was at one time professor in the medical department of the University, for whom the proposed building is intended as a memorial.

Miscellany.

THE RECENT EPIDEMIC OF INFLUENZA IN BOSTON.

THE following chart shows the total death-rate, from all causes in Boston, by weeks, from the week ending November 28, 1891 to that ending March 5, 1892. For comparison, the death-rate of the previous year is also shown, in dotted lines. The lower lines show the proportion to the total death-rate of those persons who died over sixty years of age. The death-rate, on the left, is calculated in the usual way, on the



basis of the annual death-rate per thousand inhabitants. The number of deaths is shown on the right. During the week ending January 9, 1892, the total number of deaths was 339, as against an average of about two hundred; while during the same week the number of persons of sixty years of age who died was 116, where-as the average is a little over forty.

The Boston City Board of Health have recently issued a set of tables classifying the deaths reported

as due wholly or in part to influenza from December 12, 1891 to February 29, 1892. From these tables the following figures are taken:

DEATHS DUE TO INFLUENZA, COMPLICATED AND UNCOMPLICATED.

	Males.	Females.
Influenza, non-complicated	21	41
Complicated with Phthisis Pulmonalis	2	6
" Bronchitis	8	19
" Heart Disease	4	16
" Arthritis	1	2
" Pneumonia	25	35
" Old Age	3	10
" Other Diseases	3	7
Total	77	128

DEATHS ARRANGED BY AGE.

	Males.	Females.
Under 5 years	.	.
From 5 to 10 years	.	.
" 10 to 20 "	0	7
" 20 to 30 "	5	7
" 30 to 40 "	4	13
" 40 to 50 "	6	15
" 50 to 60 "	9	12
" 60 to 70 "	16	19
" 70 to 80 "	16	32
" 80 to 90 "	9	16
" 90 to 100 "	1	6

DEATHS ARRANGED BY NATIVITY AND PARENTHAGE.

	Nativity.	Percentage.
United States	97	60
Ireland	77	48
England	8	9
Scotland	0	1
Germany	4	4
British Provinces	15	9
Italy	1	2
Other Countries and Unknown	3	32

A SURGEON'S IMPRESSIONS OF AMERICA.

DR. RUTHERFORD MORISON, of Newcastle-on-Tyne, describes a visit of eighteen days in America, during which time he saw seven hospitals and met several American surgeons. He describes his visit somewhat at length in the *Edinburgh Medical Journal*. As a preliminary, he says that the American surgeon is a good fellow and it will be a Britisher's own fault if he cannot get along with him.

He seemed to be surprised that ether was always given and that chloroform is mostly regarded as unsafe. In connection with the Johns Hopkins Hospital, the technique of the common surgical proceedings is described. American surgeons claim that their hospitals and nurses are better than the English. The first claim he does not deny, he also acknowledges that the lectures at the training schools for nurses is an advantage which the English nurse does not have. Concerning the hospitals in Boston he says, everything including hospital staff, nurses and all else is decidedly English.

He expresses great surprise at the choice of the point of election, rather than for a lower operation in amputations of the leg. In conclusion, he gives his general impressions of American surgeons and instruments, as follows:

American much more resembles German than English surgery. Germans have an indescribable way of taking possession of an anesthetized patient, giving the impression that he is entirely their own, and that they mean to do just what they like with him. German instruments are much larger, forceps like tongs, scissors like sheep shears, retractors like garden rakes.

The German surgeon is seldom in doubt, and has an excellent embryological, bacteriological and pathological explanation of all his cases and results; if

there is a mistake, something is to blame, not the surgeon. Then there are other German specialties, such as, metal-handled knives, the invariable introduction of needles by a holder, the wearing of special operating apparel, and the selection of only such operations as can be performed with deliberation and in open daylight; all have more or less influenced American surgery. Results are after all the test, and on these a judgment must be formed; and from this standpoint, his belief is that if English surgeons do not wish to be overtaken, they must put their best foot foremost.

IN MEMORIAM. DR. JAMES AYER.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

In taking official notice of the death of Dr. James Ayer, the Society desires to record its high estimate of one of its oldest members.

By his constant attendance at the meetings of the Society, and by the high standard of his professional and his private character, he earned the respect and esteem of the Society, as well as of the community.

The Society respectfully tenders to the family of Dr. Ayer its sympathy with them in their bereavement.

THERAPEUTIC NOTES.

LYSOL.¹—Starting with Fränkel's view that the antiseptic properties of creolin depend upon some higher homologues of phenol, it was believed that the cresols in soluble form would be more active as disinfectants than in emulsion. The result of this study was the production of lysol, which contains fifty per cent. of cresols, is miscible with water, and forms clear solutions with alcohol, petroleum or benzene, chloroform, carbon bisulphide, and glycerine. Gerlach and others have found it active and prompt in arresting the development of microorganisms. Fürbringer believes that after cleansing the nails with a one-half to one per cent. solution, the hands being immersed two or three minutes, using a brush, other disinfection is unnecessary. This process does not attack the hands. For sterilization of instruments, one-fourth of one per cent. solution is sufficient. Cramer and Wehner believe that it is five times stronger than carbolic acid, and one-eighth as poisonous; considering the weak solutions necessary, it is relatively cheap.

EXTRACT OF A SHEEP'S THYROID FOR MYXEDEMA.—Murray² reports a case treated by injections of an extract from the thyroid of a sheep in which excellent results were obtained, and a second successful case is reported by Wallace Beatty, M.D.³ The lobe of the thyroid gland is taken from a newly-killed sheep. It is cut up into small pieces and placed in a test-tube, with 1 cubic centimetre of pure glycerine and 1 c.c.m. of .05 solution of carbolic acid. The tube is plugged with wool and allowed to stand for twenty-four hours. After this the mixture is pressed through muslin, and about fifty minims of a turbid pink liquid are obtained, which may be injected by means of a hypodermic syringe in two doses during the course of a week. All the steps of the preparation of this mixture are carried out with due precautions to ensure that the liquid is thoroughly sterilized as well as all the instruments employed.

¹ Medical Press, No. 5, 1892.

² British Medical Journal, October 10, 1891.

³ Ibid., March 12, 1892.

Correspondence.

A POSSIBLE SOURCE OF ERROR IN USING THE FEVER THERMOMETER.

PEPPERELL, MASS., March 21, 1892.

MR. EDITOR:—About two months ago, after having my fever thermometer, a Hicks', seven minutes in the axilla of a man sitting in his chair, the bulb well up in the axilla, the stem down, I found the temperature indicated, 110.2° F. A second trial gave 109.4° F. Not believing the temperature to be so high, and examining the index carefully, I found that it had left the point where the mercury separates in the stem, and would run from the bulb or towards it just as it was placed higher or lower than the stem. Since that time I have had four similar experiences, and now if the temperature indicated is 104° F., or more, I do not feel sure that it is correct unless I find the mercury in the stem touching the point where it usually separates. How general this fault is with thermometers whose indexes are formed of a long column of mercury, or otherwise, I cannot say.

S. W. FLETCHER, M.D.

[It is safer to keep the stem up.—ED.]

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 12, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diphtheria	Diphtheria and croup.
New York	1,515,201	919	357	15.73	22.44	3.74	.99	6.05
Chicago	1,029,850	519	185	15.01	12.35	3.04	1.14	5.79
Philadelphia	1,046,364	501	185	15.01	12.35	3.04	1.14	5.79
Brooklyn	806,343	384	134	13.26	21.32	4.42	1.04	5.72
St. Louis	454,770	160	52	16.71	9.45	1.85	2.52	1.89
Boston	448,471	216	68	12.42	16.62	3.22	1.38	3.68
Portland	296,368	113	39	14.24	14.33	—	.89	8.90
Cleveland	282,000	97	44	16.48	15.45	1.03	3.69	6.18
New Orleans	242,030	—	—	—	—	—	—	—
Baltimore	240,000	—	—	—	—	—	—	—
Milwaukee	214,000	77	32	15.60	16.80	5.20	—	7.80
Washington	230,292	118	32	7.65	24.65	1.70	1.70	—
Nashville	76,168	39	13	—	—	—	—	—
Charleston	65,165	39	13	—	—	—	—	—
Portland	36,425	16	5	6.25	25.00	—	6.25	4.85
Albion	34,210	22	8	3.64	3.55	4.55	—	—
Lowell	77,406	44	16	15.89	18.16	—	2.27	2.27
Fall River	74,398	38	14	5.26	26.30	—	—	2.63
Cambridge	70,928	27	11	11.11	15.50	—	—	11.11
Lynn	55,127	18	4	22.22	16.66	—	—	11.11
Providence	44,419	21	10	9.52	32.33	4.76	—	—
New Bedford	40,733	21	7	4.76	4.76	—	4.76	—
Salem	30,801	10	5	—	10.00	—	—	—
Glocester	27,300	9	4	42.88	14.28	—	—	14.28
Gloucester	25,445	9	3	33.33	—	—	—	11.11
Newton	24,651	8	1	—	—	—	—	—
Malden	24,379	4	1	—	50.00	—	—	—
Quincy	22,857	5	1	—	16.66	—	—	—
Waltham	18,707	7	1	14.28	—	14.28	—	—
Pittsfield	17,281	3	3	66.66	33.33	33.33	—	33.33
Quincy	16,723	1	1	—	—	—	—	—
Northampton	14,960	6	2	20.00	20.00	—	—	20.00
Springfield	13,947	8	2	12.50	12.50	12.50	—	—
Medford	11,676	8	1	—	—	—	—	—
Hyde Park	10,193	3	0	—	—	—	—	—
Peabody	10,158	2	0	—	—	—	—	—

Deaths reported 2,935: under five years of age 1,062; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 401; acute lung diseases 530; consumption 346; diphtheria and croup 163; scarlet fever 89; diarrhoeal diseases 35; typhoid 10; 25 meningitis 12; typhus fever 8; malarial fever 3; cerebro-spinal fever 2.

From typhoid fever Philadelphia 7, Boston, Cincinnati and Lowell 3 each; St. Louis, Cleveland and Washington 2 each,

Brooklyn, Milwaukee and Springfield 1 each. From measles New York 18, Brooklyn 3, Philadelphia, St. Louis and Boston 1 each. From whooping-cough New York 8, Philadelphia 4, Boston, Cincinnati and Washington 2 each, Brooklyn, Cleveland, Lowell and Fall River 1 each. From typhoid fever New York 8, Philadelphia and Boston 2 each, St. Louis, Cleveland, Louisville, Nashville and Lynn 1 each. From cerebrospinal meningitis New York and St. Louis 3 each, Philadelphia, Brooklyn, Cleveland, Nashville, Lowell and Lynn 1 each. From typhus fever New York 8. From malarial fever Philadelphia, Brooklyn and Cleveland 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending March 5th, the death-rate was 20.5. Deaths reported 4,013; acute diseases of the respiratory organs (London) 379, whooping-cough 158, measles 105, diarrhoea 45, diphtheria 41, scarlet fever 28, fever 13.

The death-rates ranged from 15.3 in Portsmouth to 32.5 in Preston, Birmingham 25.7, Bradford 19.0, Cardiff 20.3, Huddersfield 24.4, Hull 20.8, Leeds 18.9, Liverpool 21.2, Liverpool 27.8, London 18.5, Manchester 21.2, Nottingham 16.7, Sheffield 22.9, Sunderland 19.2, Swansea 28.8, West Ham 19.5, Wolverhampton 25.6.

METEOROLOGICAL RECORD.

For the week ending March 12, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Baro-meter Date,	Thermometer.			Relative humidity.	Direction of wind.	Velocity of wind.	Weath'r. * 8.00 A. M. 8.00 P. M. 8.00 A. M. 8.00 P. M. 8.00 A. M. 8.00 P. M. Rainfall in inches.
	Daily mean.	Daily maximum.	Daily minimum.				
S. 6	29.05	36	43	29	51	57	54
M. 7	29.81	41	51	31	63	53	58
T. 8	29.59	37	46	34	77	106	88
W. 9	29.38	42	50	34	N.W.	N.E.	19
T. 10	29.20	39	56	35	N.W.	E.	16
F. 11	29.44	39	56	35	S.W.	W.	26
S. 12	29.70	28	36	20	61	57	59
	29.65	37	44	30	66	72	68
						13	17

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow. * Indicates trace of rainfall. ** Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 12, 1892, TO MARCH 18, 1892.

LIEUT-COLONEL FRANCIS L. TOWN, surgeon, U. S. A., while on duty at Headquarters, Department of California, in charge of the office of the medical director, will, in addition to said duty, examine recruits at the rendezvous in San Francisco, California.

FIRST-LIEUT. WILLIAM N. SUTER, assistant surgeon, U. S. A., granted leave of absence for four months, from March 22, 1892.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 19, 1892.

E. H. MARSTELLER, passed assistant surgeon, ordered to duty at the Naval Academy.

W. F. ARNOLD, passed assistant surgeon, from the "Virginia" and to the "Richmond."

C. H. T. LOWNDES, assistant surgeon, from the "Richmond" and to the "Vermont."

D. DICKINSON, surgeon, from the Navy Yard, Mare Island, and two months' leave.

A. M. MOORE, surgeon, from Naval Hospital, Mare Island, and to Navy Yard, Mare Island.

E. NORFLEET, surgeon, from the U. S. S. "Monocacy" and granted three months' sick leave.

G. T. SMITH, assistant surgeon, from the U. S. S. "Mohican" and to the C. S. S. "Hassler."

L. L. YOUNG, assistant surgeon, from the "Independence" and to the "Mohican."

W. K. SCOFIELD, medical director, granted one year's leave of absence with permission to leave the U. S.

SECTIONS OF THE AMERICAN MEDICAL ASSOCIATION.

The Committee appointed at the last meeting of the American Medical Association to consider the best means for promoting the prosperity of the sections of the Association will hold an adjourned meeting in the Hotel Cadillac, Detroit, Mich., June 6th, at 3 p. m.

Members of the Committee are requested to notify the Chairman of their intention to be present at this meeting.

The Committee would esteem it a favor if each member of the Association would communicate in writing his or her views concerning the best measures for promoting the development of the sections. Such communications may be sent to the Chairman of the Committee.

JOHN S. MARSHALL, M.D., *Chairman,*
9 Jackson Street, Chicago.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held on Monday, March 28, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock p. m.

Dr. F. B. Harrington, "A Case of Disseminated Fat Necrosis."

Dr. J. T. Bowen, "The Present Position of Electrolysis in the Treatment of Cutaneous Affections."

G. G. SEARS, M.D., *Secretary.*

SIXTH ANNUAL STATE SANITARY CONVENTION OF PENNSYLVANIA, PRELIMINARY ANNOUNCEMENT.—It is the intention of the State Board of Health of Pennsylvania to hold the Sixth Annual State Sanitary Convention in the city of Erie. The Board, as well as the local committee in charge, extend a hearty invitation to all persons in any way interested in sanitary matters to visit Erie upon this occasion. The convention will be held March 29, 30, 31, 1892. Arrangements have been made for a programme which will possess not only interest, but permanent value.

A full programme will be issued within a week of the convention meeting.

All boards of health and municipal councils are urged to send delegates.

GEORGE GROFF, M.D.,
PEMBERTON DUDLEY, M.D., } *Committee
of
Benj. Lee, M.D., Secretary, } Arrangements.*

RECENT DEATHS.

D. HAYES AGNEW, M.D., died in Philadelphia, March 22d, aged seventy-three years. Dr. Agnew was born in Lancaster County, Pa., in 1818, and received his degree of M.D. from the University of Pennsylvania in 1848. He became demonstrator of anatomy, and assistant lecturer on clinical surgery at the University, in 1870, professor of operative surgery, and the following year, professor of the principles and practice of surgery. He was also professor of clinical surgery at the University Hospital, and surgeon in the Wills Ophthalmic, the Pennsylvania and the Orthopedic Hospitals. During the war he was consulting surgeon in the great Mower Army Hospital at Chestnut Hill, a position which entailed the supervision of an enormous amount of surgery. When President Garfield was shot, Dr. Agnew was made consulting surgeon, and later was the chief medical adviser of the president, until his death. Dr. Agnew was the author of many papers and works on medical subjects, the principal one being a Treatise on Operative Surgery.

GEORGE MONTGOMERY, M.D., M.M.S.S., of Newburyport, died in New York, March 17th, aged fifty-seven. He graduated at Bowdoin in 1854, and practised medicine in New Hampshire until 1873, when he removed to Newburyport. During the war he was surgeon of a New Hampshire regiment.

JOSEPH DRAFER, M.D., M.M.S.S. (non-res.), died in Brattleboro, Vt., March 17th, aged fifty-eight. He graduated from Jefferson Medical College in 1858, and in 1872 became superintendent of the Vermont Asylum for the Insane, which position he has since held.

ALBERT THOMAS STAHL, M.D. (Bowd. 1875), M.M.S.S., died in Boston, March 16, 1892, aged forty-five years.

HENRY HAMILTON SPROAT, M.D. (Harv. 1865), M.M.S.S., died at Freetown, Mass., March 15th, aged fifty years.

JAMES ROSS, M.D., LL.D., F.R.C.P., Professor of Medicine; Victoria University, Manchester, England; the author of several works on Diseases of the Nervous System, died February 25th, aged fifty-five years.

HUBERT DE CHANGE, M.D., Inspector-General of the Medical Department of the Belgian Army, inventor of different surgical instruments, died early in March.

Original Articles.

REFLEXES IN HIP-DISEASE.¹

BY E. G. BRACKETT, M.D.

In the examination of a hip-joint which is suspected of being the seat of disease, many of the signs upon which we must rely are what might be regarded as indirect, or caused by reflected action; and because the joint is so deeply placed, and not accessible to direct examination, these signs become the main source of evidence, not only as to the existence of disease, but also, in a great measure to its character, activity, etc.; as, for instance, the most valuable symptom, that of muscular spasm, which is purely involuntary in character, and is one of the most unfailing of signs in all stages. The mechanism of this is not satisfactorily explained, at least on good physiological grounds; but it must occur in some way through the intervention of the nervous system, and may be from either a condition of unusual irritability of the nerve-centres, or simply the result of over-stimulation. We have rather fewer reasons for considering it the latter, and yet the former is not proven. One condition, which must bear a close relationship in the method of its occurrence to this one of spasm, but which seems to have been in a great measure neglected, is that of reflex activity.

We may consider a physiological relation between the joint and the muscles governing it; and therefore the constant irritation of the diseased part results by cumulative action in a condition of hyper-excitability of nerve elements. It has been found by Iodowsky, that prolonged peripheral irritation results in an increased functional activity of the nerve cells, and the continued irritation from the diseased joint may thus find expression in unusual response to stimulus, as, for instance, in muscular spasm. Theoretically we may expect under certain conditions to find the reflexes rather more active than usual, such being those in which we have a sensitive condition of the joint, and which finds expression in the spasm of the muscles which guard the affected joint. Such alone would perhaps not be of special value, but of corroborative evidence—one of several symptoms which point to a diseased articulation. If, however, we could find that this excess of irritability was definitely localized, it would assume greater importance. For instance, if in a disease of one hip we may look to find them exaggerated on the affected side, it becomes a sign of value, and also for distinction from those cases of low spinal caries, which in their early stages closely simulate hip-joint disease.

In these observations from which the results are obtained, the tendon reflex was taken in the usual way, by tapping the patella tendon with the leg flexed. In those cases in which the knee could not be flexed, the attempt was made to elicit it by Gower's method of downward pressure on the patella by the forefinger, and tapping while this pressure is being made. Its response to this method is a sign of excess, but whenever it was not obtained, and the other could not be employed, the case was not used, as such failure could hardly be considered as evidence of its condition.

The cases are divided into those which were in a

¹ Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

quiet state, as shown by the absence of all subjective signs, and those in an irritable condition, as shown by the presence of pain, sensitiveness, etc., and each of those in turn according to whether there was present muscular spasm.

HIP-DISEASE (17 Cases).

Quiet Cases, without spasm,	16	Reflexes equal 15, unequal 1.
		Normal 11, increased 5.
" with "	19	Reflexes equal 3, unequal 16.
		Normal 6, increased 13.
Irritable Cases, with spasm,	12	Reflexes equal 3, unequal 9.
		Normal 2, increased 10.

SPINAL CARIES (21 Cases).

Quiet Cases, without spasm,	6	Reflexes equal 6, unequal 0.
		Normal 5, increased 1.
" with "	11	Reflexes equal 14, unequal 0.
		Normal 12, increased 2.
Irritable Cases, with spasm,	1	Reflexes equal 1, unequal 0.
		Normal 1, increased 0.

The table in this series of cases shows an almost constant relation between the spasm and the increased condition of the reflexes, and granting a value to one we must give the same to the other. The indications are that it is an evidence of an irritable condition of the joint, rather than of a sensitive condition, and would apparently be of value in determining the amount of freedom to be allowed to the diseased joint.

It will be noticed that in the "irritable" class, in which we should expect the amount of peripheral irritation to be much greater, the proportion of unequal reflexes is much less. This seems to be in corroboration of the theory, as we may suppose the irritation, being much greater, to have passed out of the reflex arc—which action is recognized to occur—and to have become more general, and we see its evidence in the greater activity of the knee-jerk on the other side.

This condition would be of no value as a diagnostic sign unless localized, that is, confined to its reflex arc, and not caused by the presence of disease. To prove this are given the results in cases of spinal caries, which are placed in the same table.

The inference which we have to draw is that the condition of the reflexes must depend on the same general causes as the muscular spasm; that in those cases which may be considered as quiescent and without muscular spasm, the reflexes are not altered from normal. When, however, the joint is in an irritable state, we may expect to find them increased on the side of the disease. The presence of subjective symptoms does not apparently affect the phenomenon. The value of this is two-fold. It becomes an indication of the irritability of the joint, in the absence of subjective symptoms, in the same way as does the involuntary muscular spasm, and also of diagnostic value in the early stages in the absence of other indications. In this it can be used as one of the evidences in distinguishing between early hip and low lumbar caries, for a marked difference is shown in the cases of spinal caries in this matter of reflexes, as these show an almost constant uniformity, and are not only equal, but much less likely to be exaggerated even with the presence of other disease.

To obtain satisfactory opinions of the condition of

the reflexes in children is frequently difficult, for the results do not always seem to be uniform, but the average of many trials will be found to be in the rule accurate. It is doubtful, however, if this symptom is of any value in cases of old disease, with very marked atrophy, for in these the reflexes are much more active than normal. The condition cannot be regarded as an infallible sign, but as one of the several of value, which are to be used in determining the existence of disease, and the condition of the joint.

THE OPERATIVE TREATMENT OF SPASTIC PARALYSIS.¹

BY CHARLES L. SCUDDEER, M.D., BOSTON,
*Out-patient Surgeon at the Massachusetts General Hospital, Assistant
in Clinical Surgery in Harvard University.*

LITTLE's disease, spastic paralysis, congenital muscular rigidity — these terms, from an etiological point of view, probably are synonymous. It is an affection of childhood, noticed at birth or soon after. It is characterized by a rigidity of certain groups of muscles, without wasting or loss of electrical reaction to faradism; by a peculiarly awkward gait, due to a loss of co-ordination in the muscles of the lower limbs; by an increase in the superficial and deep reflexes and by the presence of more or less mental impairment, which may be absent. Usually the adductors of the thighs, or the flexors of the arms or legs are involved, giving rise to a most distressing deformity.

Pathologically, as far as is at present known, the causative lesion is located in the motor tract of the central nervous system.

Spastic paralysis has been mistaken for certain conditions found in hip-disease, infantile paralysis, and the paraplegia of Pott's disease. But if care be exercised, the differentiation is easy.

Relief is sought for the progressive deformity which is the result of the rigidly contracted and shortened muscles.

Treatment by drugs and electricity has failed. Surgically, an attempt has been made to improve the muscular conditions, by attacking the cerebral lesion, but without success. Bullard and Bradford have reported such an attempt. As Bradford has suggested, when the surgery of the brain has become more advanced it may be possible in a few of these cases, to attack the central nerve lesion successfully.

At times progression is absolutely impossible, and at best it is much impeded. The deformity depends, of course, upon the groups of muscles concerned: if the adductors be involved, the child will stand with the thighs flexed and adducted. If the hamstrings be implicated, the feet are flexed, and, in walking, the child balances on the toes, dragging the feet close to the floor with a clinging gait and rubbing the knees together.

To relieve the deformity, apparatus has been used, but no matter how well fitted and carefully managed, it accomplishes nothing permanent, the deformity recurs immediately upon its removal. Forceful correction, with or without ether, and immobilization in plaster are of no service.

Rupprecht,² apparently recognizing this deficiency

in mechanical measures, calls attention to the good results obtained by tenotomy of the tendon of the gastrocnemius.

Bradford³ has added still further to the advantages to be derived from this procedure, by demonstrating the utility of an open and thorough division of all resisting structures, whether presenting at the groin or ham. In spastically contracted limbs, uniform success has attended thorough tenotomy and myotomy of resisting tendons and muscles complicated with immediate fixation. This success is, at present, an unexplained clinical fact. After tenotomy the muscles increase in size and strength.⁴

To the few reported cases of successful operation for spastic contraction of the lower limbs, let me add one more.

This case is made unique by the presence of a hydrocephalus, the existence of spina bifida, a rotary, lateral spinal curvature, and because mental impairment is absent.

The patient is twelve years old, a bright and intelligent girl, with a good family history. At birth, a soft spot, gradually increasing in size, was noticed in the middle of the back, becoming firmer, until, at present, in the lower lumbar region in the median line is a tumor the size of a flattened orange. The skin over this tumor is not thin, and fluctuation is distinct. There is no variation in the size of the tumor either upon pressure, manipulation, or forcible expiration. The base is broad.

While the patient was a baby this tumor was aspirated, and after "weeping" a clear fluid for some time, the opening spontaneously closed. When two weeks old the child's head was noticed to be increasing rapidly in size. In the second year of life the anterior fontanelle was closed. At present the head is large. The circumference is twenty inches plus. There have been no convulsions at any time. The spine presents a marked dorso-lumbar, lateral rotary curvature, which has developed gradually, and, at present, is rather poorly held by a steel waist-band, with crutches.

When two and a half years old the child walked. When eight years old the heel cords "began to grow tight," causing a talipes equinus. A little later the knees began to strike in walking, and permanent adduction occurred; then the knees began to flex, and remained permanently so. The gait gradually changed, and now the child walks on the toes with the feet inverted, the knees forcibly adducted, the thighs flexed on the trunk, a moderate lordosis in the lumbar region, and in the dorsal region, a marked rotary lateral curvature to the right.

Two years ago tenotomy was done on both ankles, with temporary benefit. At present the condition of the spastically contracted muscles is as follows:

The foot on the right side can be flexed beyond a right angle, that on the left to a right angle. Extension of the right ankle is possible to a little beyond ninety degrees. In the left ankle extension is practically normal. Abduction of the thigh is possible to a greater extent on the right than on the left. The right knee is flexed to about ten degrees, and the left to about twelve degrees. The muscular power of both thighs and legs is good. Ankle-clonus is present, and the knee-jerk is exaggerated on the right side. The ankle-clonus is absent from the left leg, and the knee-jerk is

¹ Read at the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

² Volkmann's Klin. Vorlage, 172.

³ Transactions, American Orthopedic Association, vol. III, p. 7.

⁴ Adams: Lancet, September 27, 1890.

exaggerated very slightly. Both arms, and all other parts of the body, are in normal condition. The head has ceased to enlarge, so far as can be determined by external measurement.

The child, etherized, was placed prone. A shallow V-shaped incision across the ham exposed the popliteal fascia, which, with the hamstring tendons, was divided; the semi-membranous, biceps and semi-tendinous were severed partly in the tendinous, and partly in the muscular part. The tendo Achillis and the plantar fascia were divided on the right side, and the tendon of the adductor longus on the left. Both lower extremities were brought into normal position and immobilized in plaster-of-Paris from the tips of the toes to the groin. After a week the patient was allowed to be up and about with crutches, and retentive apparatus, consisting of an upright on either side of the leg, fastened to the shoe below and thigh-band above, a leather pad over the knee preventing flexion.

After about seven months she was allowed, a portion of the time, to go without the splints, and now, ten months after the operation, wears no apparatus. There has been no recontraction. She is learning to use her legs well, stands straighter, and walks with slight assistance without the use of crutches.

Mentally the child is brighter than children of her own age, and is enjoying the greater freedom of movement which she now possesses.

These cases of spastic contraction, being at present, incurable, are entitled to all the benefit that can be afforded by so safe an operation as above described. The spina-bifida having remained for several years quiet has demanded no interference, and considering the general good health of the child, operation of any sort is not justifiable. The spina-bifida is protected by a hard rubber pad.

In the *Boston Medical and Surgical Journal* for January 17, 1889, p. 61, Cabot has called attention to the necessity of dividing the tendons, where it is possible, near enough to the muscular belly to maintain a connection between the severed tendon and its muscle, thus preventing a matting together of the tendons in their sheaths, as happens when the division is lower. The same rule applies to the tendons of the ham. The division should be an open one, and through the tendons within the limits of muscular insertion.

SPASTIC PARAPLEGIA.¹

WITH REMARKS ON A CASE REPORTED BY DR. C. L. SCUDDER.²

BY WILLIAM N. BULLARD, M.D., BOSTON.

THE case previously reported by Dr. Scudder, I saw in consultation with him. Cases of spastic paraplegia in combination with spina bifida are very unusual. The origin of this form of paralysis in such a case is not at first sight plain, and it may be worth while to consider this subject shortly.

Before entering, however, into discussion of this special case, I should like to say a few words in regard to spastic paraplegia in general. By the term spastic paraplegia we designate a condition of the lower extremities in which their movements are more or less impeded by an increased tonicity or rigidity of the

muscles, causing a greater or less fixation of the limbs, and a resistance thereof to both active and passive motion. This condition is in such cases always connected with some paresis of the extremities, and it may precede or follow such paresis, but in the large majority of cases the rigidity and paresis coexist. When the rigidity of the muscles continues unrelieved for a considerable time, permanent contractures are often formed, and these are well known to every surgeon. The contractures due to spastic paraplegia must be carefully distinguished from those due to other causes. They are totally different from the contractures found in old cases of anterior poliomyelitis, the so-called paralytic contractures, and are not to be confused with the conditions existing in congenital varus and club-foot, which are usually due to wholly different causes.

Spastic paraplegia, when permanent, is always due to an affection of the lateral columns of the spinal cord. This affection may be primary or secondary.

Organic spastic paraplegia are of various forms. They may be of spinal or cerebral origin; they may be primary or secondary.

Spinal spastic paraplegia occurs in various affections of the spinal cord, but the contractures produced are rarely so great as to require or suggest operation.

In children — and it is of them only that I shall speak here — only one form of spinal spastic paraplegia is of ordinary occurrence. This is that occurring in transverse myelitis, the "pressure" myelitis of caries of the spine. It may be caused by any form of pressure on the spinal cord.

The form of spastic paraplegia due to transverse myelitis is readily differentiated from that due to cerebral affections, both by the presence of affection of sensation in the former cases, and by the greater predominance of the paralysis over the spasticity.

CEREBRAL SPASTIC PARAPLEGIA.

This form is very frequent, and nearly all spastic cases suitable for operation are of this class. This is both because the contractures in this form of paraplegia are more severe and more permanent and less amenable to treatment than those due to caries of the spine, and also because of the marked tendency to spontaneous cure in the latter cases.

(The term spastic paraplegia is sometimes used synonymously with cerebral spastic paraplegia. When used, as it sometimes is, improperly to designate a disease rather than a symptom, it assumes this significance. This involves, among other things, the error of assuming that all cases of cerebral spastic paraplegia are due to the same pathological condition.)

In children, in my opinion, practically all cases of spastic paraplegia not due to transverse myelitis (pressure paralysis) are of cerebral origin. (Primary lateral sclerosis is almost unknown in children, and hemorrhage into the spinal cord, producing this affection, seems to be very rare. The vast majority of cases of spastic paraplegia, not due to caries of the spine, present the characteristics of a cerebral and not of the spinal form.)

I shall not enter here into the causation of cerebral spastic paraplegia in children. It may be due pathologically to any destruction or lasting inhibition of the functions of certain portions of the cortical area, or of the fibres which pass from them through the internal capsule and pyramidal tract into the lateral columns in any part of their course. It is commonly the result

¹ Read before the Surgical Section of the Suffolk District Medical Society, February 2, 1892.

² See page 306 of the Journal.

of intra-cranial haemorrhage, usually meningeal, or of atrophy of the brain from whatever cause.

To return to the special case under consideration. To what in this case is the spastic condition due? Is it an exception to the general rule, and may a spina bifida so act upon the lateral columns by pressure or otherwise as to produce a spastic paraplegia, or is it due to some other cause?

In regard to the possibility that a spina bifida should cause a permanent spastic contracture in the lower extremities, I should not wish to express an absolute opinion, but in any case it is very rare. It is true that paralyses of the lower extremities are not uncommon in spina bifida, occurring according to the statistics of the Committee of the Clinical Society of London in about one-fifth of the cases — 53 out of 244 — and this percentage is probably much too small. But these paralyses are not spastic in character, and do not lead to spastic contractures.

(Certain cases have been reported in new-born children where with spina bifida the lower extremities were held in a position of flexion, the thighs flexed on the abdomen, and the legs on the thighs; but in these there does not appear to have been any true spastic contracture. Dolinger reports a case of temporary spastic contraction of the muscles of the lower extremities, which disappeared when the sac was emptied, and reappeared as it refilled. The sac was in the lumbar region.)

I have thus far been unable to find any account of spastic contractures occurring in uncomplicated spina bifida. In our case, moreover, several special reasons combine to render the hypothesis of its direct origin from the spina bifida improbable. In the first place, the paraplegia is of what we may call the pure type — that is, uncomplicated by symptoms referable to other portions of the cord than the lateral columns. This in children is practically always cerebral (primary lateral sclerosis in them being almost unknown); secondly, it is difficult to understand how a spina bifida in the lumbar region could cause an affection of both lateral columns of the cord without more evidence of the affection of other portions.

But if the spina bifida is not the cause of these contractures, to what then are they due? In this and in all similar cases I believe these spastic paraplegiae to be cerebral, and to be the result of the accompanying hydrocephalus. Spastic contractures in connection with secondary hydrocephalus are very common, but may, perhaps, more fairly be considered in many cases as the result of the primary lesion. In hydrocephalus, however, which appears idiopathic and primary, they are less common, but more frequent than is sometimes supposed.

Hydrocephalus connected only with spina bifida, as in our case, and not due to cerebral disease, must be considered primary. In connection with the late development of the contractures in our case that of Anton may be mentioned, where, in a case of congenital hydrocephalus, spastic contractions appeared in the previously unaffected extremities at the age of nine. This late appearance in primary hydrocephalus is probably not uncommon.

In this case, and in similar ones, therefore, I am inclined to believe that the spastic paraplegia is not directly due to any effect on the cord occasioned by the spina bifida, but is the indirect result of the accompanying hydrocephalus. The exact steps by which

this result is produced are not yet wholly proved, but the numerous investigations now going on, on this and analogous subjects, render it not improbable that we may before long obtain a more exact knowledge of them.

Clinical Department.

A CASE OF THE PHELPS OPERATION FOR TALIPES EQUINO-VARUS: RESULTS.¹

BY H. W. CUSHING, M.D.
Assistant Surgeon to the Children's Hospital.

The accompanying illustrations represent some casts of the foot of an otherwise well-developed patient, age eight years, which I thought might be of interest in connection with the "Phelps" operation. The first (Fig. 1) shows a congenital talipes equino-varus of the more severe type. A foot which was unyielding to any attempt at manual *redressement*. The patient walked, as the callus shows, almost on the dorsum of the foot. The toes point inward ninety degrees from the normal position, and are elevated. You can thus appreciate the amount of bony distortion and contraction of soft parts which must have attended such a deformity.



FIG. 1. The X is at a point on the anterior surface of the ankle-joint, midway between the malleoli.

This foot I treated by the "Phelps" method. An unsuccessful attempt at *redressement* under ether. Then a tenotomy of the tendo Achilles and plantar fascia. Then through the vertical incision, which Phillips has so well described, a division successively of the tibialis posterior, abductor pollicis, flexor longus digitorum, flexor longus pollicis, deltoid ligament, the inner half of the flexor brevis digitorum and flexor accessorius.

After division of each, an attempt was made to correct the deformity. Sometimes the foot yielded; at others no gain was attained. At length, as I was about to attack the astragalus, a final effort caused something to yield in the mid-tarsus, and the foot came easily into good position, leaving a wedge-shaped defect one inch wide at its cutaneous surface and ex-

¹ Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

tending from the centre of the sole to the level of the internal malleolus. During these manipulations the internal plantar vessels, which were unusually small and had been dissected free with great difficulty, were ruptured.

The wound healed in the usual manner, by the Schéde method (without complication), and was practically closed at the first dressing, twenty-one days after the operation. The complete organization of the clot and the final removal of all dressing was about the fortieth day.



FIG. 2.

Three and one-half months after the operation this cast (Fig. 2) was taken. During this time the patient wore a Taylor club-foot shoe. At this date all apparatus was omitted. The foot is perfectly straight, especially the anterior part so often seen still somewhat inverted after operative treatment. The sole is in its normal position. There is no equinus. The patient can flex the ankle beyond a right angle, and walks without a limp.

The points of interest in this case have been :

(1) The completeness of the reduction of the deformity.

(2) The small cicatrix, that is, small when the original gaping wound replaced by it is recalled.

(3) The amount of pain immediately following the operation. Quite marked for twenty-four hours. Then gradually diminishing, and finally ceasing at the end of the third day.

(4) The tendency at present of the foot to assume a position of valgus apparently from a lack of support of its inner edge. This happens at times in cases treated by torsion and other operative methods, and can be controlled in this case if it shows a tendency to increase. It may disappear as the cicatrix becomes firmer. It is now noticed only when the foot has to support the weight of the body as in standing, walking or similar attitudes.

I contribute this record as a proof of the efficiency of Dr. Phelps's method, and to show the result which may be attained by it.

THE LONG ISLAND (N. Y.) COLLEGE HOSPITAL.—The Thirty-third Annual Commencement was held on March 23d. The graduating class numbered 64.

A CASE OF DOUBLE CONGENITAL CLUB-FOOT IN THE ADULT.¹

BY A. THORNDIKE, M.D.

I HAVE always regarded it as a curious and significant fact that many of the severe and neglected forms of club-foot, those which defy the ordinary and more gradual methods of correction by mechanical appliances, can be cured and serviceable limbs obtained without any cutting or removing of bone; and I have ventured to present this report of a single case in order to illustrate this fact and see what deductions, if any, could be drawn from it for our guidance in treating club-feet of this so-called resistant class.

S. C., single, twenty-eight years old, was referred to me last June, by Dr. George Haven, and admitted to the House of the Good Samaritan, June 29th. She was the oldest of five children, who, with the parents, were all, excepting her, free from malformations; maternal impressions were not considered to have influenced her condition, and she was not otherwise deformed. She complained of pain and tenderness in her feet, and said that this was so troublesome that after doing a little housework on one day she usually was obliged to spend the next two on a lounge or in bed.

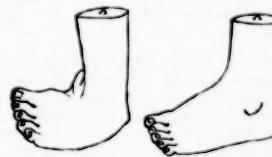


FIG. 1.

FIG. 2.

She was thin, poorly developed, and very short; she walked with a waddling gait, rolling considerably, and bore her weight on the outer sides of her boots; the toes were turned in, so as to point directly at each other. The feet were kept widely apart in stepping, and she required assistance to keep her balance. The deformity was precisely alike on both sides, and is best seen by referring to the cut, Fig. 1, drawn from a plaster cast of the left foot taken at entrance. Figure 2 is from a cast of the same foot made January 10, 1892. The heel was lifted posteriorly, and was twisted in, so that in standing the plantar surface of the heel was turned inward and backward, while the anterior sole was drawn in by the contracted plantar fascia, so that it lay in a plane facing directly backwards. The tarsus was very prominent, and the metatarsal bones and toes, instead of lying alongside of each other as in a normal foot, were rotated so as to lie vertically one above the other; the toes also pointed a little upwards as well as inwards. The outer malleolus nearly touched the ground in standing, and its outline was lost in a large tender callous which surrounded it and extended along the outer border of the foot. It was an equinovarus of a severe type. The deformity did not yield much to pressure with the hand; but very little force could be used without causing pain. Under ether, it was evident that her weight was borne chiefly on the anterior surface of the calcaneus and a part of the cuboid.

¹ Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

On June 30th she was etherized, and tenotomy done on the right tibialis anticus, and on both tibiales postici and both plantar facie. Dr. Bradford's modified club-foot lever, which is figured below, was applied, and by intermittent twistings (using considerable force) the malposition was so far reduced that the skin on the inside of the sole was beginning to split. Dr. E. G. Brackett and Dr. J. E. Goldthwait were present, and we all agreed to stop before actually splitting the skin, preferring to leave the completion for another time rather than incur the complication of an open wound and a scar which might be tender and painful and interfere with locomotion. The feet were accordingly enveloped in small baked-gauze dressings, and plaster-of-Paris bandages applied from the tips of the toes to six inches above the bent knees. Six weeks later she was again etherized and the feet easily over-corrected by the lever applied as before; similar dressings and plaster bandages were used; for a day or two immediately after the first operation there was some pain, none afterwards.

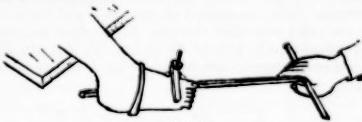


FIG. 3.

The subsequent history after removing the plaster bandages shows that she did toe-in a little with both feet at first, and there was also some edema and tenderness, otherwise everything progressed uniformly well. She wore a pair of Taylor club-foot shoes, with long outside uprights and a short posterior arm at the waist to evert the feet; after three months the long uprights were shortened to the usual size, and the Taylor shoes worn all day except for one hour, when she walked about in her stockings in order to gain suppleness and pliability. There has been no trouble from toeing-in since.

The improvement in the gait was quite rapid. Two weeks after the apparatus was applied she went down two flights of stairs and up again. It is now more than six months since the operation, and she returned for observation ten days ago. The cast (Fig. 2) taken at that time show the position of the feet; both feet could be raised beyond a right angle with the leg, and the motion of the right ankle-joint was fully normal, while the left was somewhat restricted. She had still further improved in walking, although she yet rolled a little from side to side. There was no sensitiveness except over a small area under the arch of the right foot.

In conclusion, it seems to me that many cases of severely resistant club foot, even in the adult, can be forcibly corrected, and should be so treated in preference to methods which mutilate the foot by the removal or division of bone. Dr. Bradford has alluded this evening to two adult cases of his own, one an unpublished case, the other to be found in the "Transactions of the American Orthopedic Association," 1889, Vol. 1; they were thirty-five and eighteen years of age respectively, and the final results in both were excellent. The method was essentially similar to the one I employed, and it is justifiable to infer from the consideration of these three cases that the severer operations should be restricted to resistant club-feet which

have failed to yield to this procedure, forcible correction supplemented, if necessary, by tenotomies; in other words, that this method should always be tried first before resorting to harsher and more radical measures. For I believe that congenital club-foot is to be regarded as a congenital dislocation of the mid-tarsal joint; that it should therefore be our aim to reduce the deformity if possible like a simple dislocation, and to hold it there by suitable apparatus until all danger of relapse is past. This risk, in adults at any rate, is not a great one provided the dislocation has been thoroughly and completely reduced. But if by the use of simple force and tenotomies a thorough and complete reduction cannot be accomplished, then, and then only, are those procedures in order which convert the simple dislocation into a compound one; namely, deep incisions into the joints, osteotomies, and excision of the astragalus. This appears to be a perfectly fair deduction to make, and I have ventured to call attention to it because the text-books say very little on this subject.

FAULTY POSITION OF THE HEAD AND NECK DUE TO THE EYES, AND CORRECTED BY TENOTOMY OF THE EYE MUSCLES.

BY E. N. JACK, M.D.,
Ophthalmic Surgeon to Out-Patients, Boston City Hospital; Physician
to Eye Department, Boston Dispensary.

I HAVE hesitated to report this case, for although the object in view has been attained, yet the eyes need further operation. As, however, the patient is getting along well, I shall do nothing more until he is able to bear operation without ether.

On February 10, 1890, the patient, a boy, nine years old, was referred to me by Dr. Bullard at the Dispensary. The history was of pain over the eyes, especially the right, every spring, lasting three or four weeks. Attention was soon called from this to the position of his head, which was constantly held bent to the right and slightly twisted on a vertical axis in the same direction. Dr. Bullard's examination of the neck and back was negative, I remember, though the records are missing. The left side of the face was slightly more prominent than the right. The end of the nose deviated a little to the right, and the mouth was drawn up a trifle in the same direction. The right side of the head behind was fuller than the left. The only history obtained from the parents was that the head had been held sideways from babyhood. Vision of each eye was 0.9 —, hypermetropia about 1.50 D., and some astigmatism, axes oblique. Fundus normal.

The boy was seen at short intervals for over a month and the following observations were made, there being but slight variation from time to time. There was habitual binocular single vision. He had the power of voluntarily producing vertical diplopia of about eight inches at eighteen feet. Could not unite in the stereoscope. There was a left hyperphoria or tendency of the left visual axis above the right, of 20°. This was the average result in all the testings. There seemed to be no eso- or exo-phoria tendency inward or outward. With the revolving prism over the left eye the test of the muscles was, base up, 3°, in, 6°, out, 10°, down, 15 to 20°.

On March 16, 1890, after several ineffectual attempts without an anesthetic, ether was given and the left superior rectus tendon cut. When tested two days

later no change from his former condition was noted. Judging from this experience and that of others the next step was taken. On April 18th ether was again given and the inferior rectus tendon of the right eye was cut completely off. Dr. Burr and Dr. Bullard assisting. For two weeks after this there was a constant vertical diplopia, which lasted in the early morning for a week or so more.

The last of May he had begun to hold his head perceptibly straighter. The eyes troubled him a little in the morning and in the evening if he sat up after eight o'clock. In September, his head had become perfectly straight, and has continued so until now. A recent examination of the eyes showed a condition about the same as the original, but reversed. He gets along perfectly well and has no trouble at school except that if he looks up suddenly the right eye deviates upward. This he easily overcomes.

A CASE OF TORTICOLLIS DUE TO HÆMATOMA OF THE STERNO-MASTOID MUSCLE.¹

BY R. W. LOVETT, M.D.

ALEXANDER P., six weeks old, was brought to the Carney Hospital Out-patient Department, in August, 1890, on account of a swelling which the mother had noticed in the neck. The child was healthy and well developed, and was born by an easy labor.

The examination showed a bunch in the left sterno-mastoid muscle, about the size of a hazel-nut. The muscle was slightly contracted, as a result of which the face was turned somewhat to the right. The head could be put into the normal position, but could not be over-corrected. The tumor was plainly to be felt, and did not seem to involve the surrounding structures, but to be limited strictly to the muscle. The case was seen by Dr. Burrell and Dr. Post, and child was put upon general treatment, which had little or no effect. The tumor gradually disappeared, and at the end of two months was no larger than a very small cherry.

The child was not seen again until sent for by the writer in January, 1892. The child now presents a well-marked case of torticollis due to the contraction of the left sterno-mastoid muscle. The head cannot be placed in a correct position, there is some asymmetry of the eyes, the tumor has entirely disappeared, and were it not for the early history, the case would pass for a routine one of torticollis.

The case is presented thus in detail because of the statement made by Dr. Whitman, in his recent exhaustive paper,² that no case of torticollis due to hæmatoma of the sterno-mastoid muscle is on record.

M. PREVOT DU HAUDRAY, following the method of Professor Garnier's studies of the Simian language, has carried his phonograph into the hen-coop. He places it in one hen-house where the "family," are at home, and when the receiver has been cackled into for half an hour it is taken away, and made to repeat all the gossip in a neighboring hen-coop. The results of the experiments are said to be marvellous, and the Académie des Sciences is awaiting a lecture on the subject with the greatest interest.

¹ Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

² Royal Whitman: *Medical News*, October 24, 1891.

Medical Progress.

RECENT PROGRESS IN PUBLIC HYGIENE.

BY S. W. ABBOTT, M.D.

THE MANAGEMENT AND CONTROL OF INFECTIOUS DISEASES.

Influenza. — The Local Government Board of England, on the 25th of last January, issued a circular of precautions to be observed during an epidemic of influenza, from which the following extracts are taken.

(1) Influenza is spread by infection from person to person. Upon this point the medical officer of the board wrote:

"In its epidemic form influenza is an eminently infectious complaint, communicable in the ordinary personal relations of individuals one with another. It appears to me that there can be no doubt as to this fact. . . . In some circumstances it would seem that ineffectiveness of influenza through the atmosphere shows itself over a wider area than the limits of household life. Probably also there are other less direct ways by which the infection of the disease can travel; and ways, moreover, by which the infection can be retained for a time in a state of suspended activity." [Since the above was written, evidence has accumulated to indicate that influenza is infectious at quite an early stage of the illness, and may remain so as late as, at least, the eighth day from the attack.]

By having established a place for this influenza among infectious diseases, we assert a position for the disorder within a class of diseases over which we habitually exercise a measure of control. But, from what we have thus far seen of the specialities of influenza, we cannot feel particularly confident of our ability, under the existing conditions of society, to successfully defend ourselves against a further outbreak. A disease that can be absent in an epidemic form for thirty years together, cannot, even if a first attack confer immunity, avail to give the protection of a first attack to any large part of the population. [Abundant evidence has now accumulated to show that influenza does not, in any marked degree, or for any considerable length of time, confer immunity against another attack.] Early isolation-precautions, applicable perhaps to children suspected to have measles, cannot well be applied to persons suspected of influenza among the bread-winners of a community; and the singular ability possessed by influenza to disperse itself over a population, owing to its brief incubation period, must add to the difficulties of dealing with an infection that finds the bulk of the population susceptible to its attack. . . .

In view of the difficulties referred to, it is not practicable to devise any restrictive measures for the prevention of the spread of influenza which shall be universally applicable.

But, under some circumstances and certain classes of persons, some such measures should be resorted to, and this notably:

(a) For persons in whom an attack of influenza would be specially dangerous by reason of age or infirmity;

(b) For the inmates of institutions, the mode of life in which can be regulated and controlled;

(c) For the first cases of influenza in a locality or a household where the attacks are early recognized.

In such cases separation between the sick and the

healthy should, as far as practicable, be carried out. Measures to this end have, in some instances, been adopted with marked success. With isolation should be combined disinfection of infected articles and rooms.

Persons suffering from influenza should not expose themselves in public places. Since the propagation of influenza is known to be promoted by the assemblage of large numbers of persons in a confined atmosphere, it is advisable that when an epidemic threatens or is present, unnecessary assemblages should be avoided.

The ventilation and cleanly keeping of any building in which many people are necessarily collected together should receive special attention when influenza threatens or is present, with a view to secure that the air of the building shall be frequently changed, at any rate during the intervals of its occupation, and to avoid accumulation of dust and dirt.

(2) The liability to contract influenza, and the danger of an attack, if contracted, are increased by depressing conditions, such as exposure to cold and fatigue, whether mental or physical.

There is reason to believe that the development of an attack of influenza in a person exposed to the infection depends very largely upon the receptivity of the individual, and that the power of resistance varies, not only in different persons, but also in the same person from time to time, being diminished by any conditions which depress the general bodily vigor. It is, therefore, important that at the time of an epidemic all persons should, as far as they are able, pay attention to such measures as tend to the maintenance of their health, wearing clothing of suitable warmth, and avoiding unnecessary exposure to cold and fatigue, unwholesome food, and excessive use of alcoholic liquors. Similar principles should be borne in mind by those who, as managers of institutions and establishments, have to make regulations for others.

The risk of a relapse and of the occurrence of those pulmonary complications which constitute a chief danger of the disease is increased by anything which involves exposure to cold or fatigue before complete recovery.

*The Prevention of Tuberculosis.*¹—Prof. M. L. Bard, of Lyons, France, proposes two essential measures for the prevention of tuberculosis in hospital practice:

(1) The disinfection of sputa and spit-cups by means of boiling water. For this purpose the apparatus consists of an iron tank for the boiling water, and racks of galvanized-iron wire, each rack holding sixteen spit-cups so that the whole rack can be immersed in the boiling water at once. Dr. Grancher advised, in addition, that some carbonate of soda should be added to the boiling water so that the boiling point could be raised several degrees, but Professor Bard thinks this to be unnecessary.

(2) The other measure has reference to the care of the floors. Instead of sweeping for the removal of the dust, moist cloths are employed. After trial of several different substances in his hospital for the purpose of making the floors impervious, he found that paraffine answered the purpose best. He found the expense to be about 38 centimes per square metre (seven cents per square yard) when applied hot, and 24 centimes per square metre (four cents per square yard) when applied in a petroleum solution. For very large floors the cost would be less.

¹ Revue d'Hygiène, January, 1892.

THE DISINFECTION OF DWELLING-HOUSES IN THE CITY OF BERLIN.²

By a decree of the police authorities of Berlin, dated February 7, 1887, it was rendered compulsory to disinfect the dwellings as well as the effects of patients suffering from a lengthy category of infectious disorders. Not only were the clothes, bedding and all articles used by the sick person to be operated upon, but the walls of the sick-chamber were to be rubbed down with bread, as prescribed by Pistor, this plan being preferred to the use of the corrosive sublimate spray which was advocated by the author, and all the furniture was to undergo special treatment. The house disinfection is carried out upon a plan devised by the author by the experienced trained staff. It was arranged that the services of a certain number of workmen should be obtained from an existing society upon a fixed payment of six marks per head per diem. These men had to receive special instruction to qualify them for their duties; and they were furnished with the requisite appliances, chemicals, etc. The precautions to be observed in the case of utensils, polished furniture, floors, etc., are laid down. All fabrics, bedding, clothing, etc., are packed up by the workmen, and disinfected by steam at the central station. In certain cases respirators of peculiar construction are worn by the operatives. The official instructions for the work are printed in full, and a list is given of sixty-three articles of dress, pieces of apparatus, etc., required by the staff. A tariff has been drawn up for the payments to be made for the work. Statistics are given, of the number of rooms and dwellings operated upon, and of the cubic contents, etc., of the fabrics disinfected.

THE DISPOSAL OF REFUSE AND DUST.

A new process for the disposal of refuse and dust was shown to the Congress of Hygiene at London. It is now in successful operation at Chelsea. The refuse sorting is almost entirely mechanical; nine-tenths of the material is never touched by hand. The dust-carts deliver their loads into a revolving cylinder, containing bars of wood, which is used to prevent bottles from being broken. The material thrown in from the dust-cart passes out at the other end, in two or three minutes. The part which does not drop through the meshes of the first cylinder is taken out and sorted by hand. That part which passes through is received into a second cylinder or screen, a powerful blast of air meets the material coming from the second cylinder and blows the paper away from it to be utilized elsewhere. The heavier material is raised by an elevator and falls upon an iron revolving table, around which boys sit and sort out the refuse. A third screen receives all that passes through the second. The meshes of the first screen are three inches square, of the second one and one-fourth inches, and of the third three-eighths of an inch. The utilized materials consist of rags, paper, and bags for paper-making, these being reduced to pulp and made into wrapping-paper on the premises. They are also bones, bottles, tin, scrap iron, boxes, straw, vegetable and animal refuse, cinders, etc. The coal is all saved, and so are the iron, boots and shoes, etc.; while much nondescript material is ground up in a mill. The organic refuse delivered at the end of the third screen is used as fuel for working the engines on the premises, and a part is sold to the

² H. Merke: Vierter Jahrschrift für off. Gesundheitspflege, 1891, p. 258.

brick-makers for fuel. The dust is conveyed by means of a blast to the furnace fires. Cinders are mixed with pitch and made into briquettes for fuel. The works are lighted by electric lights generated by the fuel obtained from the refuse, and the company hopes in the future to be able to utilize the contents of the London dust-bins to light the streets of the city.

FILTERING ESTABLISHMENTS FOR MUNICIPAL WATER-SUPPLIES.²

At a meeting of the German Health Society held in September last the following propositions were discussed :

(1) All surface-water must, before being used for drinking purposes, be freed from any possible sources of infection.

(2) For this purpose, in all cases in which large volumes of water have to be dealt with, filtration through sand may be deemed to be the most practicable and perfect process under existing circumstances.

(3) The sand filter is not, as it is generally assumed to be, thoroughly efficacious under all circumstances. Sand filters are by no means capable of extracting all germs, but when intelligently worked, it is possible by their means to confine the germs within very moderate limits.

(4) The following are the conditions for satisfactory working : (a) Good raw material (unfiltered water), so far as possible free from pollution. (b) Moderate filtering speed. (c) Regularity in the working of the filter. (d) The rejection of the water supplied at the beginning of each filtering period.

Recent experiments has shown that a sand filter is not absolutely *germ-tight*. It depends largely for its impermeability upon a thin stratum of impurities and micro-organisms entangled in its upper layers or deposited as a net-work upon its surface, and for this reason, until a considerable body of water has been passed through the filter, leading to the formation of this preservative layer of organic matter, the water yielded is liable to contain many germs. This network, however, greatly retards the passage of the polluted liquid, and in the course of time opposes such obstacles to the action of the filter that the filtration has to be discontinued in order that the filtering substance may be cleansed.

Professor Pieck, in continuing the discussion, said it was a matter of extreme importance to render the speed of filtration independent of the fluctuations in the daily rate of consumption, which varies very considerably. For this purpose a compensation-reservoir is necessary. He also called attention to the superior quality of the water yielded by covered filter-beds to that obtained from open filter-basins. Their freedom from ice is also an advantage.

THE WATER-SUPPLY OF PARIS.³

The water-supply of Paris is divided into two distinct services, one for streets, yards, stables, gardens, and industrial purposes, and the other for house-supply. For the domestic-supply the pure and fresh spring-waters of the Vanne and Dhuis are led from their source to covered reservoirs by closed aqueducts, and conveyed to the consumer without contamination ; while the public service is supplied by the waters of the Seine, the Marne, and the canal de l'Ourcq (which

is also used for navigation), and there are some other sources, including artesian wells.

In 1878 these combined resources were equal to a maximum daily yield of 270,000 cubic metres for domestic-supply, the total of 397,000 being equivalent to 198 litres per head of the population of two millions. The works for obtaining this supply comprised the artesian wells, the aqueducts (old and new), and twelve pumping-stations working at a total of 2,130 horse-power.

The insufficiency of this system of water-supply had already been recognized ; and in 1879 the Municipal Council decided upon a scheme for extending the works in several directions, so as to provide a daily delivery of 70 litres of spring-water, and 200 litres of river-water per head of the increased population. The works contemplated in this programme were at once begun, and may now be said to have been completed, although the details have in the meantime been considerably altered.

The paper describes the works that have been actually carried out, including three new pumping-stations on the Seine, the addition of further motive power to existing stations, the collection of some other sources of spring-water, and the extension of the reservoirs. There are now on the Seine seven new pumping-stations, equipped with twenty steam-engines and thirty-nine boilers, working up to 2,400 effective horse-power ; on the Marne three stations, containing twelve hydraulic machines and five steam-engines with ten boilers, working altogether up to 1,500 horse-power ; and in the valley of the Vanne four stations, containing six hydraulic machines and four steam-engines working up to 450 horse-power.

Of the new pumping-stations, the most important is that at Ivry, situated on the left bank of the Seine, and just above the confluence of the Marne.

(To be continued.)

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

(Concluded from No. 12, page 294.)

In Memoriam.

DAVID HUMPHREYS STORER.

BORN March 26, 1804. DIED SEPTEMBER 10, 1891.

GEORGE HINCKLEY LYMAN.

BORN JULY 17, 1819. DIED AUGUST 19, 1891.

MEETING of Wednesday, January 20, 1892.

DR. LYMAN.

DR. C. ELLERY STEMDAN read an interesting sketch of Dr Lyman's life :

George Hinckley Lyman was born in Northampton, July 17, 1819, the son of Jonathan Huntington and Sophia (Hinckley) Lyman. He was educated in the Round Hill School in Northampton, and was then

² Deutsche Vierter Jahresschrift für Gesundheitspflege, 1891, p. 38.

³ Annales des Ponts et Chaussées, February, 1891.

obliged to pass several years in Ohio and other Western States, on account of his health, before beginning his professional studies in Philadelphia. He took his medical degree at the University of Pennsylvania in 1843, served as interne at Blockley Hospital, and passed nearly two years in medical studies in Paris, returning to Boston in 1845. He married, first, October 14, 1846, Maria Cornelia Ritchie, daughter of James T. Austin: she died in 1864, leaving two sons and two daughters; he married, second, February 13, 1879, Henrietta, daughter of Samuel T. Dana, who survives him.

He began practice in Boston on his return from Europe, and while enduring the tedious waiting for patients which is the lot of young doctors, busied himself in study and writing. Patients, however, were not long in coming to one so well equipped for his work, and although Dr. Lyman's *clientèle* was never large, owing to his four years' absence in the army, it was of the most satisfactory kind. It is not improbable that he was disappointed in finding that his professional line was likely to be the physician's rather than the surgeon's, for he had fitted himself especially for surgical work. But surgery in Boston was at that time in the hands of a few men, who did not look favorably on new aspirants.

His first paper was on "Non-malignant Diseases of the Uterus," and won the Boylston Prize for 1854. His second contribution to medical literature was an essay which gained the prize offered by the Massachusetts Medical Society for a "Dissertation on the History and Statistics of Ovariectomy, and under what Circumstances the Operation may be regarded as Safe and Expedient." This was in 1856, when ovariectomy was yet looked on with no little distrust and even with dread. By its painstaking research and well-argued positions, the essay contributed in a signal manner to a consideration of the operation more serious and more favorable than it had yet gained. A list of his writings is appended to this notice; among them, besides those here named, is one on "A Case of Embolism of the External Iliac, followed by Gangrene, Loss of Leg, and Recovery," which has an interest in connection with his own last illness.

When the war of secession broke out, Dr. Lyman was one of the first to offer his services to Governor Andrew in response to his call for volunteers in April, 1861. He co-operated with Dr. William J. Dale in organizing the State Medical Bureau. Dr. Lyman's work was here of high importance, system having to be evolved out of disorder, and discipline to be enforced on people who were surprised to learn, for the first time, of the duty called obedience. Dr. Dale says in a letter to Adjt-Gen. Schouler: "Whatever of success attended the preparation of the troops prior to my commission is attributable to Dr. Lyman, who showed great energy and good judgment, and was constantly in consultation with the Governor." Dr. L. V. Bell, Dr. Henry Bryant and Dr. Lyman were the first candidates to appear before the Medical Examining Board in Washington. His name was reported at the head of the list, which gave him rank over all civil appointments in the medical service during the war. On September 7th, he was assigned Medical Director of Gen. Fitz John Porter's entire division. On the march to Yorktown, where his duties were arduous, Dr. Lyman contracted a severe dysentery, which seriously disabled him at the time,

and in the form of chronic diarrhoea continued to annoy him for years after the war. After the retreat from Yorktown, Dr. Lyman became Medical Director of the Fifth Corps when General Porter took command of it. On June 27th, the whole corps of twenty-six thousand men received the attack of double its number at Gaines's Mill from noon till dark, when it was withdrawn across the river. At Gaines's Mill two hospitals were established. In full operation until the fight was nearly over, the heavy fire rendered these at last untenable. A part of the surgeons were captured as they left one door, while the rest escaped from the other. The fatigues and exposure of the surgeons busied about the work after these battles were exceedingly great, and in Dr. Lyman's case terminated in such complete collapse as to make rest imperative. Fortunately for him, the opportunity was afforded by a recent law adding to the regular army eight medical inspectors with the rank of lieutenant-colonel, four from the old army surgeons and four from civil life. Assuming the duties of the new rank, he was ordered to inspect the hospitals in Baltimore, Philadelphia, New York and Washington. Thence, with headquarters at Louisville, he had monthly to inspect and report on medical work in Kentucky, Tennessee, West Virginia, Ohio, Mound City, and as far South "as our lines may extend." In December, he found in Nashville, the churches, many houses and warehouses overflowing with wounded. In such duty Dr. Lyman continued till he was transferred to the Department of the East, to inspect New England, New York and New Jersey. Extra duty of inquiry into alleged abuses in the large hospitals at the East gave him in the department three thousand five hundred miles of railway travel. In December, 1864, Dr. Lyman was ordered to the Department of the South, for inspection of hospitals and to await the arrival of General Sherman's army at the sea, and report on its sanitary condition. He remained in this department until he resigned in November, 1865.

On leaving off his uniform, Dr. Lyman returned to Boston, where private practice soon claimed almost all his time. During the war a hospital for the city of Boston, the need of which had been talked about for years, was planned, built, and opened in 1864. Dr. Lyman was consulted in its rise and progress, and on its completion was offered the post of visiting surgeon, but he did not clearly see his way to undertake the arduous work which the appointment would bring. But in 1871, on being made visiting physician, he assumed that position and filled it with energy and devotion; he was particularly interested in its gynaecological work, and never tired in studying and treating, with sedulous attention, the class of cases which form so interesting a department of hospital experience. In all the affairs of the hospital his judgment was sought and followed, and his interest in all that concerned its administration and its usefulness never abated.

In 1879, he was elected President of the Massachusetts Medical Society, and brought to its varied and far-reaching work the same zeal and thoroughness which characterized his hospital service. He was a good presiding officer, ruling strongly, with impartiality and coolness. Before this, in 1870, he acted as anniversary chairman, and in 1875 he had pronounced the oration, his subject being "The Interests of the Public and the Medical Profession." This topic he handled in a broad and vigorous manner, having the

courage of his convictions in no feeble degree. He did not believe in women practising as physicians, and was not at all afraid to say so, fortifying his positions with arguments well considered for that time. He was not given to yielding any opinion which he had thoughtfully adopted, and the writer does not know that he materially modified his views of that question, as increased experience has led most of us to do. The address was characterized by good sense, and its recommendations of legislation in medical matters were important. It brought him, besides the applause of the Society, many letters of congratulation from the best-known men of the profession.

Veterans of the war are prone to weary a younger generation with their reminiscences, as Thackeray says the Peninsular and Waterloo veterans did in his day. The writer thinks, however, that he is not mistaken in considering that the most valuable and most readable of his writings is a paper which he presented to the Military Historical Society of Massachusetts, on "Some Aspects of the Medical Service in the Armies of the United States During the War of the Rebellion." The subject gave him opportunity of greater freedom in style, and allowed some play of the humor which helped to make his company so agreeable to those who saw most of him, no trace of which was permitted to appear in his scientific writings. A study of this paper, in the event of another war, would be of inestimable aid to the organization of a large surgical service, the very foundation of which may have to be laid in the midst of alarm and confusion.

Dr. Lyman was one of the founders of the American Gynaecological Society, and among his public associations he belonged to the Obstetrical Society of Boston, with which he seldom failed to meet, and where his voice was frequently and respectfully listened to; the Boston Society for Medical Improvement; the Suffolk District Medical Society; the Military Historical Society of Massachusetts; and the Military Order of the Loyal Legion of the United States. He was an Honorary Member of the Harvard Medical School Association, and for many years he was vestryman of St. Paul's Church.

Dr. Lyman went abroad in the spring of 1890; passed the winter in good health in Dresden, Florence, Rome and Venice, the early summer of 1891 in Switzerland and Paris. On his way home he was suddenly seized with facial erysipelas, of which he had survived four previous attacks at long intervals. The disease had cost him the sight of an eye ten years before by sequence of an orbital abscess. This attack abolished the sight of the remaining eye, and an embolism of the femoral artery occurred before he succumbed, on August 19th and the tenth day of his illness. His friend Dr. Priestley, and subsequently Dr. William Ord, and his son Dr. William Ord, Jr., were unremitting in their attendance at his bedside. He was buried at Mount Auburn, September 21, 1891.

Dr. Lyman's presence was singularly fine, his physical strength was great, his step was active, his manner alert. He was proud and sensitive, and very decided in all his views. His absorption in his duty made him sometimes abrupt. He could put up with no disobedience, delay, neglect, or inaccuracy, and thought every one was as young and energetic as himself. He was a loyal friend, and his love for his profession, instead of diminishing with advancing years, ripened into an enthusiasm which younger men could not

always attain to. If he took little pains to conciliate those whom he disliked, yet an unjust attack on a brother physician, even on one whom he did not esteem, would rouse his keenest indignation. His mental activity led him to read almost every new medical book in the English tongue, and very much of current general literature.

This love for his profession, his earnestness and thoroughness, his large sense of honor, and his exalted and unselfish patriotism are denied by none who knew him, and are a model for all young men, for all soldiers, and for his countrymen.

Dr. H. W. WILLIAMS spoke of Dr. Lyman as follows: Dr. Lyman was a distinguished instance of what may be done, in exceptional and unusual ways, by one of our quiet profession.

After receiving his degree of M.D. at Philadelphia in 1843, Dr. Lyman spent a long time in careful observation of the phenomena and the treatment of disease in the great hospitals of Europe, before returning to establish himself at Boston. Here, he very soon attracted deserved attention, by the publication of two essays, to both of which prizes had been awarded for their conspicuous excellence, by our medical societies. These were not only valuable for their accurate statements of facts and observations regarding a class of cases then little understood by the majority of our practitioners, but they showed evidence of the author's discrimination in the garnering of the store of practical wisdom which was there accumulated, — and, moreover, they charmed the reader by their clearness and elegance of style.

These essays evinced such a thorough knowledge of their subjects, and so much of candor in discussing them, that they at once gave to Dr. Lyman a high position among his professional brethren. They appreciated his alertness of observation and his enthusiasm; and noted his thorough preparation for his work, which gave fair promise of his success as practitioner. These expectations were not disappointed.

Others have done justice to Dr. Lyman's patriotism in placing his time and his skill, his comfort and his health, upon the altar of his country, during long years of war. And this was done, — not in any outburst of youthful enthusiasm, or ardent hope of distinction; but with the calm resolve of sacrifice. Here, his great executive ability and his matured professional experience were alike serviceable; and the duties of high military positions were performed with prompt self-devotion.

Resuming his home-life, with well-won laurels, Dr. Lyman's administrative talent and professional standing marked him for the highest offices within the gift of the medical fraternity. As President of the Massachusetts Medical Society he was dignified and faithful in the discharge of his duties, and vigilant in promoting its welfare. As one of the seniors of the Visiting Staff of the Boston City Hospital he was courteous towards his colleagues, and skilful in his treatment of the patients under his charge.

Dr. Lyman ardently supported what he deemed was for the honor and welfare of the profession; and in administrative matters, he gave candid attention to advocates of a different policy than his own, and heartily adopted other opinions and plans when satisfied of their greater merit; — thus showing himself wise as well as efficient in fulfilling the duties devolving on him.

Dr. Lyman was an active and interested member of societies for medical improvement; where his vigor and originality of thought, his ripe experience and his clearness of expression in debate gave weight to his opinion.

He was one of the founders, and was Vice-president of the Massachusetts Medical Benevolent Society, established thirty-four years since for the purpose of aiding worthy members of our Profession, or their families, who from illness or misfortune have fallen into distress; — and was zealous in its behalf as a much needed means of usefulness.

As a representative of the amenities of the profession, Dr. Lyman was without a rival. He had large acquaintance with notable men of the medical world, in this country and abroad, — and many of these were recipients of the graceful and elegant hospitalities he delighted to offer.

In the course of nearly fifty years of professional life, Dr. Lyman was called to perform functions quite apart from the ordinary routine of a physician's duties. He never hesitated to undertake or failed to accomplish these services, devoting to each his abundant energy, discretion and loyalty: affording to us an example of fidelity, and of zeal in every good cause, which is not often found even in our own self-sacrificing profession.

I can but add my personal tribute to Dr. Lyman's high qualities as a comrade and friend. Returning from my first visit abroad, where I had spent nearly three years, I found myself almost a stranger in my natal city: fortunately for me, I came to reside in the same district with Dr. Lyman, and we were introduced to each other by mutual friends, — our seniors in the profession, — finding in our recent experiences in European hospitals many subjects of interest to both of us.

The ties of friendship then formed were never loosened during the many years which have intervened, until they were lately so sadly sundered.

DR. COTTING, unable to be present, sent the following:

In the death of Dr. George H. Lyman, the medical faculty lost an associate of generous impulses, gentlemanly bearing, of marked ability, and of exemplary loyalty to the profession. A believer in nature, he was no disbeliever in art. Quick to detect the dangerous tendencies of disease, he was actively alert in efforts to avert them. In public service, and in private practice, with the rich, and among the poor, he was alike diligent and devoted. Ambitious for usefulness, sympathetic in action, he ennobled his calling by published precepts and personal example. He was faithful in friendships, considerate of others, truthful and trustworthy. He will be long remembered.

DR. JOHN G. BLAKE said: I have already paid my tribute to the memory of our dear friend and associate in the columns of the *Medical Journal* in behalf of the staff of the City Hospital. But I would like to emphasize again the qualities of mind and heart for which we who knew him best, most esteemed him. The two strongest points in the character of Dr. Lyman are easily discerned. They were cheeriness and thoroughness. His comforting presence in the sick-room was very marked. It dispelled care both for patient and friend. We, who ought to know so well what anxious eyes follow every look and tone of the physician by the bedside, sometimes forget the importance

which those who are watching lay upon our manner. It is from it they are to derive strength and courage, or the reverse. Dr. Lyman never forgot this; and his cheerful nature never failed to leave the sick-room brighter for his presence. We all know how much this element of hope has to do with the well-being of the patient.

His thoroughness showed itself in every detail of his work. His few papers show not only the foresight which gathered information, but the sound judgment which made it available. Whether as historian or essayist, his work was always sure of respect. It was forcible and clear. In the more active duties to which he was called, as Medical Inspector during the war, as President of the Massachusetts Medical Society, and the Obstetrical Society, his time and thought were honestly given to whatever came within the province of his department. Those of us who remember his record in these places of trust, will not forget the painstaking attention to duty with which he filled his place. He was always in earnest. In these two respects alone, his life is a valuable lesson to the younger men of the profession who are about to enter upon active life. Enthusiasm and earnestness are two great factors of success in any profession, but especially in ours. Dr. Lyman possessed both; and it is largely for this reason that his memory will remain honored and beloved beyond ordinary limits among his colleagues.

DR. A. L. MASON said: My relations with Dr. Lyman were those of a friend of many years, as well as an intimate professional associate. His friendship, from my boyhood, was always sympathetic, considerate and constant, and I have a deep feeling of personal loss in his departure from among us. To his friends and to his patients Dr. Lyman was truly self-sacrificing and loyal. In their welfare he was untiring. With intense pride in his profession, he was zealous in maintaining its prestige and its honor. Although his death was in one sense premature, for he was still strong, erect and vigorous, he had already received the rewards of a life well-spent, in those substantial honors which gratified the ambition of his nature.

Dr. Lyman's early life was by no means without its struggles. He was born in 1819 at Northampton, and attended the Round Hill School, then famous. But, owing to his father's early death he adopted business pursuits which carried him to the far West, and he then acquired those habits of self-reliance, as well as a fondness for out-door sport, which he retained through life.

But, business was uncongenial to him and, in 1842, he joined an elder brother in the Medical Department of the University of Pennsylvania, where he graduated in the summer of 1843, and at once entered the Philadelphia Hospital as resident physician.

In November of the same year, however, he went to Europe, and to that time in his life he always looked back with pleasure. The journal which he kept in those days gives the picture of an enthusiastic, but discriminating, student, who made many friends, saw most of the distinguished teachers of the day in Paris, London and Dublin, and took in much that was entertaining and valuable in his two years of foreign study and travel.

But he was a strong and patriotic American. At first he was somewhat depressed by the loneliness which comes over a stranger in London. In his jour-

nal, under date of November 30, 1843, he says, "Although I am so old a traveller, I have slept on a blanket on the floor of a log cabin in Iowa Territory, miles from any other house, with less feeling of loneliness than I have to-night in the heart of the largest city in the world." This was at the age of twenty-four, nearly fifty years ago, when Iowa was indeed a wilderness. However, he soon adapted himself to the environment, and in writing of the great parks of London, says: "They are all rich and magnificent and their immensity in this crowded city would amaze our American citizens. Strange that we do not take advantage of the abundance of room which our cities afford, and that too at a comparatively small price, for the establishment of similar ones. Fifty years hence the want of them will be much felt." And so it is with us to-day, or has been until recently.

February 5th, he saw a murderer guillotined at the Barrière St. Jacques, and thus describes it:

"A firmly-built fellow of perhaps thirty years of age, stepped onto the platform very gaily, accompanied by the priest and one or two others. His neck was bared immediately and bent over into the clasp by the executioner, when by the touch of a rope the axe fell and severed his head from his body as smoothly and quickly as if it had been an apple. The head fell into a basket of sawdust on one side, and his body was at the same time pushed into a box of water like a bath tub on the other. He did not make a single struggle. Indeed, from the time the cart was escorted onto the ground by the mounted troops, until all was over and his body in the cart again, did not exceed five minutes. An awful sight from its very rapidity, though probably the most humane way of execution. Saw his body at dissecting-room this evening, hardly yet cold. He had committed many murders and the family are notorious villains. The first execution I have ever witnessed, and I hope it may be the last for I have had very queer sensations in the region of my neck all day. Noticed a gentleman and a lady there (at least to all appearance such), she with white gloves and an opera glass seemingly enjoying it very much. A worthy descendant of old Mother Eve."

After a visit to Père la Chaise Cemetery, he remarks that: "Not infrequently American names meet the eye, and one's sympathies are involuntarily excited by seeing the names of one's countrymen who have died so far from their firesides, with perhaps none but strangers to smooth their pillows."

Dr. Lyman himself died far from his fireside, but not among strangers, for everything that was possible was done by his professional brethren in London to relieve the sufferings of his last days.

Many interesting incidents, hospital experiences, meetings with celebrated people, and historical reminiscences are thus recorded from day to day.

Among Dr. Lyman's classmates and early associates was Dr. John T. Metcalfe, the distinguished physician of New York, who writes as follows to a member of Dr. Lyman's family:

"We entered the University of Pennsylvania in the fall of 1842. Our acquaintance began then, from the fact that we were under the same teachers and attended the same 'quiz.' Our private tuition was under the supervision of the late Drs. William W. Gerhard and W. Poynette Johnston, very eminent men. In the spring of 1843 we were graduated by that most ancient and honorable Medical School, diplomas from which

were reckoned generally to be second to those of no other American School of Medicine.

"After graduation we parted, to meet in Paris in December, 1843. There, too, we were thrown together by a community of masters. After a year in the French capital I induced Lyman to go with me to Dublin, where were to be found especially great facilities for the study of fevers and of practical obstetrics. . . . As a student, he was devoted to the work of his life. It was our habit to go to the hospital at 6 a. m. for clinical lectures from the great masters in medicine and surgery of those days. . . . In one way or another we worked honestly until 6 o'clock when our modest three-and-one-half-franc table-d'hôte dinner was disposed of. After that, as a rule, books were discarded for the day. . . . The thorough-bred gentleman, the man of wide reading, the *good, good* physician, the true friend, the honest man,—why should I mention those attributes with which all his *confrères* and friends were so familiar?"

Toward the end of 1845, Dr. Lyman was glad again to seek his own shores, and, from that time on, his life is a familiar one in this community.

After establishing a practice, he left it in 1861 to go to the war, during which he did his part.

Among the earlier acts of Congress, in 1861, was one providing for twenty brigade-surgeons to be commissioned by the President after an examination by a board of army surgeons. Dr. Lyman was the first to appear before them, and *this* commission was the first one signed by the great President Lincoln under that act, a matter of no little pride to its possessor.

In the Army of the Potomac throughout its organization, through the disastrous campaign on the peninsula, afterward as medical inspector in all portions of the country, he did efficient service, and after the end of the war he returned, like so many other gallant men, to find his practice broken up and his place filled. But, with renewed energy, he soon entered upon his later career, which was all the more honored and honorable from his past record, and this was to him in his final years a source of satisfaction beyond the transient disappointment which he felt on his return from the war.

In the Massachusetts Medical Society, and in the City Hospital of Boston he took the liveliest interest, and at the time of his death was on his way home to take his final term of hospital service before the completion of his fiftieth year in his chosen profession.

DR. J. C. WHITE made the following motion: "That a committee be appointed by the Chair to take action in connection with the recent death of our beloved and honored associate, Dr. Henry I. Bowditch." Seconded and voted.

The Chairman appointed as the committee, Drs. F. Minot, J. C. White, C. F. Folsom, F. C. Shattuck, R. W. Lovett.

PAPERS, ETC., BY DR. LYMAN.

Non-Malignant Diseases of the Uterus. An essay which obtained the Boylston Prize for 1854. 2vo, pp. 76.

The History and Services of Otorhinology, and the Circumstances under which the Operation may be Regarded as Safe and Expedient. Prize Essay: Massachusetts Medical Society Publications, Vol. I, No. 1, pp. 146. Boston, 1854.

The Interests of the Public and the Medical Profession. The Annual Discourse before the Massachusetts Medical Society. 2vo, pp. 36. Boston, 1855. Printed Communications, Massachusetts Medical Society, Vol. XII, No. 1.

In Memoriam: Charles Edward Buckingham. *Transactions American Gynaecological Society,* Vol. II, pp. 3. 1873.

A Case of Embolism of the External Iliac, followed by Gangrene,

Loss of Leg below the Knee, and Recovery. Boston Medical and Surgical Journal, N. S., Vol. III, pp. 3-8. May 29, 1869.

Pelvic Effusions, and the Importance of their Early Recognition with Reference to Treatment. Read before the Obstetrical Society of Boston. Boston Medical and Surgical Journal, 1882.

Notes on Cases of Pelvic Effusions Resulting in Abscess. Transactions American Gynecological Association, Vol. VI, pp. 96-133. Boston, 1882.

Symptoms of Gynecological Cases treated in the Boston City Hospital for Five Years preceding January 1, 1881. Medical and Surgical Reports, Boston City Hospital, Third Series, pp. 28. 1882.

Tinnitus Aurium and Vertigo as Prominent Symptoms of Lithiasis. Journal of the American Medical Association, December 20, 1883, pp. 16.

Historical Sketch of its Members in the War of the Rebellion. An Address given to the Obstetrical Society of Boston. Pp. 62. Printed by the Society. 1887.

Some Aspects of the Medical Service in the Armies of the United States during the War of the Rebellion. By George H. Lyman, late Lieutenant-Colonel and Medical Inspector of the United States Army. Read before the Military Historical Society of Massachusetts, May 15, 1890. Avo, pp. 46. Boston, 1891.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, February 3, 1892,
DR. H. W. CUSHING, Chairman *pro tem.*

DR. E. H. BRADFORD read a paper on

OPERATIONS ON THE TARSUS FOR CLUB FOOT.¹

DR. A. M. PHELPS, of New York, read a paper entitled

A METHOD OF OPEN INCISION FOR CLUB-FOOT.

The following is a summary:

Nearly thirteen years have elapsed since first I performed the operation of open incision for club-foot. The first cases were reported to the New York State Medical Society in a paper read in 1881.

These cases were treated before I knew anything about antiseptic surgery, and, strange but true, the results were almost equally as good as in the cases upon which we are now operating, following rigid antiseptic rules.

The dressings employed in these cases were splints, which fitted imperfectly, causing considerable pain. The incisions were much too long and more tissues were cut than necessary. The change in the operation as then performed, consists in making an incision commencing in front of the inner malleolus and extending one-third the distance across the sole of the foot, carried down to the neck of the astragalus, on its inner side. Through this small wound the abductor pollicis, tibialis posterior tendon, the plantar fascia, the flexor brevis muscle and long flexor tendons of the toe and finally the deltoid ligament, with all its branches, if necessary, can be cut.

Nothing will be gained by cutting the soft parts more extensively. This, of course, is done after subcutaneous tenotomy of the tendo-Achillis has been performed. Great force is used to rupture the deep ligaments, and if the foot cannot now be drawn to a supercorrected position easily, a linear osteotomy should be made through the neck of the astragalus. If this fails, a V-shaped piece should be removed from the os calcis, the point of the V meeting the linear osteotomy. This failing, the removal of the cuboid and scaphoid is indicated. And, as a last resort, Pirogoff's amputation should be resorted to.

In 198 cases of severe club-foot, nearly all of which had either been operated upon or treated for years

¹ To be published later.

with braces, I have found it necessary in only twenty-two to perform osteotomy. Osteotomy, including astragalus resection, ought never to be performed as a primary operation.

In a large number of pathological specimens which I have in my possession, the contraction and deformity of soft parts is out of all proportion to the deformity of the bone, and in two or three specimens of very severe talipes varo-equinus but slight deformity exists in any bone, but rather a dislocation of all bones, one upon the other, and slight changes in their articular facets.

An operation once decided upon, the foot should be supercorrected. Following this rule, cut the parts which first offer resistance, cutting in the order of those parts which first contracted when the deformity was produced, beginning with the tendo-Achillis. The equinus should be overcome as far as possible, first, for the reason that the ligament, extending from the tibia to the os calcis, when short, which it is in about one case in ten, must be ruptured, and not cut, because the nerves and blood-vessels lie close to it. The foot can be used as a lever, and with the hand or with a machine this ligament can be ruptured. If, as has been advised by some, an open incision is first made in the foot, and it is so weakened by an open cut that a sufficient amount of force cannot be applied to rupture the ligament without doing injury to the foot, the equinus cannot be corrected, and a relapse must follow. After subcutaneous tenotomy of the tendo-Achillis, if the skin is found short, make an incision, beginning in front of the inner malleolus and extending at right angles with the foot, one-third the distance across the sole, and carry it down to the inner side of the neck of the astragalus. Through this incision the tissues can be cut in the order already given. Great force should be used after cutting each tissue. If the foot cannot now be placed in a supercorrected position, linear osteotomy with the chisel should be performed through the neck of the astragalus.

If this fails, the next step is the removal of a V-shaped piece from the body of the os calcis, the point of the V meeting the linear osteotomy. If this fails, remove the cuboid and scaphoid bones, which I have found necessary to do in two cases, in adults.

It will be observed that the operation begins by manipulation, taking the various steps up to extensive osteotomy, and in exceptional cases, Pirogoff's amputation may be performed as a last resort.

If these steps are followed, osteotomy will be found necessary in only about ten or twelve per cent. of all cases, and in one-half of these a simple linear osteotomy, the least severe of all the bone operations, will suffice.

There has thus far been no death following the operation of open incision. As I have already stated, the mortality from osteotomy, or from astragalus resection, is from three to five per cent.

Inasmuch as the open incision method furnishes as good results as any operation known, is unattended with danger to the patient, and more than ninety per cent. of all cases are straightened without osteotomy, it certainly should be resorted to before osteotomy is attempted.

In the management of all cases of club-foot, begin with manipulation and fixed dressings; then subcutaneous tenotomy; open incision; and the various forms of osteotomy already enumerated. Thus you

will see that the legitimate place for open incision is between subcutaneous tenotomy and osteotomy.

Osteotomy should never be resorted to as a primary operation — not until the soft parts have been lengthened. The foot must be shortened in proportion to the amount of bone removed, or in removing the astragalus the entire limb will be shortened. It is not necessary to perform osteotomy in a greater percentage than ten, in all cases under the age of fifteen years.

To summarize my results up to the time of my report made at the International Congress (I have operated upon thirty-seven since reading that paper), I find that: In 93 cases there were 161 operations performed, the average age being six and a half years; the average time of healing the primary wound was four weeks; there were 117 cases of blood-clot organization; 4 cat-gut; and 19 failures of blood-clot organization in 140 cases.

The duration of after-treatment was ten months; on the fourth month after operating, the feet were all straight. Out of the 140 cases traced after one year, 10 cases were found relapsed, or partially so, from neglect. I will say that relapses, when they occur, take place during the first year after the operation, as a general rule.

DR. AUGUSTUS THORNDIKE read a paper on

A CASE OF ADULT CLUB-FOOT.²

DR. H. W. CUSHING reported

A CASE OF CLUB-FOOT CORRECTED BY OPEN INCISION.³

DR. A. M. PHELPS: Dr. H. W. Cushing said there was pain in this case. I have observed that in all cases where the operation has been performed so that the foot is supercorrected, if the foot is dressed in that position, there will be pain; but if you dress a little short of that, I do not think pain will be found. There are gentlemen who believe in the contractile treatment of club-foot, and I fully agree with them. We are, however, discussing a class of cases where we expect that the ordinary means of traction, etc., must necessarily fail. These are the relapsing forms. I do not believe it is a good plan to treat a club-foot seven or eight years with a club-foot machine when you can gain as good a result in much less time. The youngest case in which I have performed open incision was in a child of seven months. In any given case if the skin is short, it had better be cut. I place great emphasis upon that. I want to lay special stress on the fact that I do not think primary osteotomy is right. I think that the principle involved in Dr. Bradford's machine is excellent. I fully agree with Dr. Bradford as to the etiology of club-foot, and as to almost everything he said, but the osteotomies I should do as a secondary operation. I believe that is clearly right; and the sooner the profession is educated to that, I think the fewer deaths we shall have. If you take all the cases I have reported and do primary osteotomy, there must have been six to ten deaths, and it is a question how far we are justified in jeopardizing the life of the patient. If we can cure the patient and get equally good results without jeopardizing the life of the patient, I believe we should do that.

DR. E. H. BRADFORD: I have been misunderstood if I have been supposed to advocate primary osteotomy in this class of cases. All these relapsing and severe

cases of club-foot are those in which other methods have been tried.

In regard to open incision. In one or two of the cases where I have employed this method, I have made this modification of the method of Dr. Phelps which seemed to me to have a little advantage, and that is that the incision through the skin should be parallel with the axis of the foot, namely, on the outer edge of the foot. Instead of making a transverse incision, I have made the incision a little longer, and by hooks drawn it apart, then inserted my knife and cut a cross incision. In the cases I have done, I have had room enough to divide and cut down to the bone.

DR. A. M. PHELPS: The object of the incision is not for the purpose of getting at the tissues underneath, but to cut the skin because the skin is too short. That incision when made is for the purpose of lengthening the skin. If the wound gapes wide open, it easily fills in, and the scar is of no importance whatever.

DR. WM. N. BULLARD and DR. C. L. SCUDDER reported

A CASE OF SPASTIC CONTRACTION OF THE LOWER EXTREMITIES WITH REMARKS IN THE ETIOLOGY AND SURGICAL TREATMENT.⁴

DR. P. C. KNAPP: I agree fully with Dr. Bullard in the pathology of these cases of spastic paraplegia in children. I go even farther in being extremely sceptical as to the existence of any primary lateral sclerosis even in adults. The cases of spastic paraplegia in adults are in the vast majority of cases to be referred to a combined sclerosis or to the secondary changes in the lateral columns, following some other disease either of the brain or of the cord itself. I would agree also in his case that the hydrocephalus is far more likely to be the cause of the paraplegia than the spina bifida, but there is one point which occurred to me as a possibility. We have in the case a congenital enlargement, congenital dilatation of the ventricles of the brain in the hydrocephalus. We have, furthermore, a deformity in the lower portion of the cord in the spina bifida, and there is a possibility that there may also be an enlargement of the central canal of the cord with a hydromyelia, which would naturally give rise to symptoms similar to syringomyelia, perhaps spastic paraplegia. I think the neurologists are at fault for not referring many of these cases to the orthopedic surgeons for correction of the deformity. In some cases considerable can be done to make walking easier. When spastic paralysis affects the arms, it is in my mind a question whether much can be done. I recall one case, a woman with spastic hemiplegia whose hand was contracted in the usual position, and she was anxious to have something done for cosmetic reasons. The tendons were cut with partial success. It is in my mind somewhat doubtful whether that operation is one to be advised, because a hand contracted in the ordinary position of flexion is certainly a more useful hand than if the flexor tendons are cut, and in most of the cases there is still a little power to the flexor tendons, enough to get a little grasp and hold an object steady in the hand, and if those tendons be cut the power is very much less, and although it may make a little better looking hand to have it straightened out, the use of the hand is not nearly so great.

DR. BULLARD: There were no symptoms of hydromyelia, and no reason to suppose anything of the kind.

² See page 309 of the Journal.

³ See page 308 of the Journal.

⁴ See pages 306 and 307 of the Journal.

DR. E. G. BRACKETT read a paper on
REFLEXES IN HIP-DISEASE.⁵

DR. LOVETT: I would like to know whether he has gone far enough to know whether that is an early symptom or not, whether it precedes the muscular spasm.

DR. BRACKETT: I think it is a condition that depends upon the same condition as that of muscular spasm. I think it is not of value in the old cases where there has been a great deal of atrophy. In those it is almost always a fact that the reflexes are very much increased.

DR. W. N. BULLARD: In cases where there is pain, the very fact of the pain is liable to increase the reflex. When there is very severe spasm, the reflex is not only increased upon the side in which the spasm is the worst, but you are liable to have a cert'n amount of increase of reflex in the other leg.

DR. E. G. BRACKETT: I have found that so in two cases.

DR. R. W. LOVETT read a paper entitled

A CASE OF TORTICOLLIS DUE TO HEMATOMA OF THE STERNO-MASTOID MUSCLE.⁶

DR. E. E. JACK read a paper on

FAULTY POSITION OF THE HEAD AND NECK, DUE TO THE EYES, AND CORRECTED BY TENOTOMY OF THE EYE-MUSCLES.⁷

DR. RICHARDSON showed a

RECURRENT TUMOR IN THE THROAT,

removed fifteen years after the original operation. The patient, a woman of about fifty, had had a small growth removed by Dr. Knight many years before. The pathologists in New York pronounced the disease a fibroma, while in Boston the tumor was considered a round-celled sarcoma. Dr. J. C. Warren made the microscopic examination. The tumor was so large that in the first place Dr. Charles Homans was obliged to put it in a tracheotomy tube, which she has worn ever since. About two years ago the mass began to trouble her again. It grew rapidly and could easily be seen and felt on the right side of the throat involving at least the pharynx and possibly the larynx. She consulted McKenzie last summer, and was advised by him to have an attempt made to remove the tumor. She decided to come home and have the operation performed here.

The growth was easily exposed by external incision, and delivered in front of the sterno-mastoid, the belly of which muscle was pressed outwards very noticeably. The pedicle was separated from the pharynx and oesophagus only by taking with the tumor a large portion of the pharyngeal mucous membrane. Haemorrhage was alarming, and the blood was kept out of the larynx and trachea only by holding the finger over the opening below the epiglottis. A catheter was left in the oesophagus.

The tumor proved to be a round-celled sarcoma, and its gross appearances before removal were very suggestive of this disease. The brilliant operation on a similar mass a little higher up which Dr. Warren easily removed, a large sarcoma of the tonsil, encouraged me very much in undertaking this case.

⁵ See page 305 of the Journal.

⁶ See page 311 of the Journal.

⁷ See page 310 of the Journal.

Recent Literature.

The Anatomical and Histological Dissection of the Human Ear. By DR. ADAM POLITZER. Translated from the German by GEORGE STONE. London: Ballière, Tindall & Cox. 1892.

Mr. Stone's by no means easy task, has been faithfully carried out and successfully accomplished. The character of the original work, its thoroughness, its attention to detail and the mass of minute and accurate information it contains, have required of the translator, a very careful following of the text and this has been done with due regard also to clearness and smoothness.

The first part is devoted, after a description of the necessary instruments, to an account of the various methods followed in the removal of the organ of hearing, with or without the naso-pharynx and Eustachian tubes, from the cadaver, either simply for anatomical purposes or without externally visible injury. This is followed by a chapter on dissection of the macerated temporal bone in the new-born infant and adult, and by nearly one hundred pages of text devoted to a most precise description of anatomical and pathological-anatomical preparations of the organ of hearing, and the first part of the book concludes with directions for making topographical sections for instructive purposes, and corrosive preparations, and with the consideration of the subjects of mounting and preservation, while the sub-chapter on histological examination includes the necessary advice as to fixing and hardening, decalcification, embedding, sectioning and staining. This is followed by the special chapters, about sixty pages, on the histological examination of the parts of the organ of hearing in succession, passing from the auricle inward, which include, as indeed does the whole work, the latest authoritative information on the subject.

The importance of a publication of this character to the aural surgeon to whom "practice in dissection work is indispensable," is justly set forth by the author when, in his introduction to the original work, he says, "The complicated character of the structure of the organ of hearing, and the involved nature of its connections with the adjoining structures and cavities, are such that they can only be intelligently studied by frequent practice in the preparation of specimens and it is only by unremitting study and manipulation of such specimens that it is possible to obtain the degree of confidence necessary to produce satisfactory results when performing an operation in such close proximity to organs of vital importance.

Treatise on Diseases of the Ear. By D. B. ST. JOHN ROOSA, M.D., LL.D. Seventh revised edition. New York: William Wood & Co. 1891.

The seventh edition of this valuable text-book has fourteen new illustrations and about twenty pages of additional reading-matter. The text is substantially the same as in the preceding edition, the more important changes being the addition of a paragraph on the subject of the removal of the ossecula in cases of suppurative middle ear disease and an enlargement of the chapters on the diseases of the mastoid process and on necrosis of the temporal bone and its consequences, both of which, containing as they do the author's experiences as well as liberal quotations from other recognized authorities, well repay careful reading and add much to the value of the present edition.

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TUBERCULOSIS IN JERSEY CATTLE; TUBERCULIN AS A DIAGNOSTIC AGENT.

SOME instructive reports by experts and a judicious editorial upon an outbreak of tuberculosis among a herd of Jersey cattle, owned near Philadelphia, are published in the *Medical News* (March 26, 1892). The herd, known as the Clairemont, was established about 1882-83, and springs from a number of imported cows bought at that time. Frequent additions to the herd have been made, from time to time, of animals bought in various places, and none but the choicest individuals have been selected, for which high prices have been paid. All of the leading strains of Jersey bulls have been used.

Every precaution has been taken to preserve the health of the stock and to increase their constitutional vigor. Inbreeding has never been practised, and the stables and animals have always been cared for in the best manner.

The herd has been regularly examined by experts, and the present outbreak of tuberculosis was recently discovered. In the rare cases in which the disease has heretofore been detected, the affected cattle have been destroyed at once, and their places in the stable disinfected.

The use of tuberculin as a diagnostic agent was an interesting feature in this outbreak. Dr. Pearson, of the veterinary department of the University of Pennsylvania, was requested, several weeks ago, to examine a cow in this herd which did not seem to be doing well, and found it suffering from tuberculosis. The animal was killed the next day, and the diagnosis was confirmed by the post-mortem examination. Thereupon he made a careful physical examination of the entire herd, and found five cows affected with the same disease, all of which were promptly destroyed. A short time after this, a fat cow that would not breed was killed for beef, and it was discovered to be in a highly tuberculous condition. This caused him to suspect

that the disease might be more prevalent than he heretofore had reason to suppose, and with the object of detecting the affected animals it was decided to use tuberculin as a diagnostic agent. In all, seventy-nine cattle were tested with tuberculin, and of these thirty reacted in a manner that was interpreted as indicating the existence of tuberculosis. Six of these were slaughtered, and of this number five presented macroscopic evidence of the existence of tuberculosis: in regard to one animal there was some doubt, which a microscopic examination was expected to set at rest.

It was decided to kill all the suspected animals, to place the remaining healthy animals in disinfected stables, to have them frequently examined, and kept strictly apart from other animals.

The ultimate result in this instance should be instructive, as throwing further light upon the value of tuberculin for diagnostic purposes, and upon the possibility of thoroughly eradicating tuberculosis from a herd where it has once established itself. The example of the owner of the herd is a good one, and his action was at once public-spirited and intelligent.

This outbreak of tuberculosis calls to mind similar ones which have occurred from time to time among herds of Jersey cattle in this State — herds which, as with this Clairemont herd, were supposed to be under the best hygienic conditions. The questions of the ways by which tuberculosis is acquired, of the necessity for the inspection of meat and dairy products, of the assumption by the State treasury of the loss entailed by slaughtering infected animals, have occupied these columns at various times.

Last September we reviewed editorially the subject of tuberculosis in all its relations, as discussed at the International Congress of Hygiene; and, in the same and the preceding issue of the JOURNAL, a paper, by the late Dr. J. A. Jeffries, upon the ways in which tuberculosis is acquired, was published.

While indirect infection is probably the chief mode of infection, there is doubtless enough direct infection to make State inspection of meat and dairy products, and a system of adequate compensation desirable. It is easier, however, to affirm this general proposition than to define the conditions and limitations under which it should be exercised, or to find expert agents for the judicious and satisfactory execution of such provisions.

NEURALGIAS AND NEURALGIC AFFECTIONS.

At a recent meeting of the Medical College of Vienna, Benedikt read a paper on the above subject, in which he distinguished three kinds of neuralgias: (1) Of the nerve-trunks or plexuses; (2) of the nerve-rods; (3) of the terminations of the nerves.

In neuralgias of the nerve-trunks and plexuses there are not only pains during the attacks, but apart from the attacks there are painful points over the tract of the nerve. In most cases all the nerves which issue from a plexus are more or less affected.

The prognosis of idiopathic affections of the nerve-trunks and plexuses is very favorable when the specific treatment is applied from the first. Among the specific medicines, Benedikt mentions in terms of special approbation iodine and subcutaneous injections of phenic acid. The salicylates and antipyrine have a curative effect only when the natural duration of the affection is short. Narcotics should be given as little as possible, as they produce only a deceptive lull. The truly specific modes of treatment are galvanization and punctiform cauterizations. Benedikt compels the eschar following the cauterizations to suppurate for eight or ten days by means of an epispastic application, and never has recourse to more than one cauterization. This treatment is, in his estimation, so efficacious that when it fails one may affirm that there exists in the neighborhood of the nerve a lesion not yet appreciable, or a constitutional disease, and that this is the cause of the neuralgia.

Neuralgias of the nerve-roots are characterized by very intense intermittent pains without *points doloureux*. The nerve is painful to the touch, but this pain is alleviated by pressure. This variety of pain is met with in ataxia and in certain painful tics. These neuralgias at the commencement are unilateral; they denote often an alteration of the spinal meninges, in which case they do not coincide with neuralgias of the nerve-trunks and plexuses—while the eccentric idiopathic neuralgias are often associated with peripheral pains or invade the nerve terminations. The unilateral, eccentric, idiopathic neuralgias of the roots have no tendency to follow an ascending course. Galvanization employed against these neuralgias gives no result, while faridization *loco dolenti* exercises a calmative, but not curative, action. On the other hand, the electric cauterizations over the seat of these neuralgias have a very favorable action. The cauterization must be applied over the roots which contain the sensory fibres of the region affected.

In the neuralgic affections of the nerve terminations (arthralgias, aphalgalgias) cauterization has also a very satisfactory effect. Faradization and the electro-static douche are very efficacious against migraine. As most patients cannot stand the treatment during the attack, it is better to carry it out in the intervals of the pains, beginning with three *séances* per week, then two, then only one; but the treatment must be persevered with a long time, from nine months to a year in many cases.

THE WORK-VARIATION OF A CHILD'S HOUR OF STUDY.

THE investigation of this question,¹ the results of which are published by Dr. Burgerstein, of Vienna, in a paper originally submitted to the Section on Infancy, Childhood and School Life, at the International Congress of Hygiene at London, in August last, was under-

taken by him to determine the time during which a pupil should be kept at work continuously in one line of mental work. For this purpose two classes of girls and two classes of boys were selected; in all 162 children of from eleven to thirteen years of age. These children were kept at work upon simple mathematical problems (addition and multiplication) for one hour, the hour being divided into four periods of ten minutes each, with five-minute intervals of rest.

During the whole period these 162 pupils worked out 135,019 figures making 6,504 mistakes. It was found that the total number of calculations made by all the children increased, roughly speaking, 4,000, 3,000 and 4,000 in the different periods. During the third period of work, the increase of work done was not so great as during the other periods. The number of mistakes also increased 450, 700 and 350 in the different periods. Here again, during the third period, the quality of the work was at its lowest. From this experiment it would appear that children of the ages stated become fatigued in three-quarters of an hour; that the power of work gradually diminishes to a certain point during the third quarter of the hour, returning with renewed force in the fourth quarter. The author concludes that continuous work for children of these ages, even though the tasks are not difficult, should not last longer than three-quarters of an hour.

MEDICAL NOTES.

THE WOMAN'S MEDICAL SCHOOL AT JOHNS HOPKINS UNIVERSITY.—The trustees of the medical department of Johns Hopkins University received last May, about \$111,000 as a preliminary endowment obtained by the Woman's Fund Committee, for the purpose of securing for women medical instruction at the University. They also received a promise of \$100,000 to be paid in February of this year, on condition that the sum necessary to make up the half-million dollars should be raised by that time. The time is now past, and the money has not been raised.

A PLEA OF INSANITY.—At a recent trial in Wisconsin, at which number of men were indicted for murder on account of having taken part at a lynching case, the jury returned a verdict, finding that at the time of the lynching all of the defendants were insane, and therefore not guilty. They also found that since the crime was committed all but three had recovered their sanity, and were therefore discharged from custody.

DR. SHIBASABURO KITASATO.—Dr. Kitasato, who for six years has been doing bacteriological work in Berlin, largely in Koch's laboratory, and whose name has become widely known in connection with his work on immunity, has been recalled by the Japanese Government to take the direction of an Institute for Infectious Diseases in connection with the University of Tokio.

¹ Die Arbeits Kurve einer Schultunde, von Dr. phil. Leo Burgerstein, oberreal Schulprofessor in Wien, etc. Hamburg und Leipzig: Verlag von L. Voss, 1891, p. 46.

PROF. W. T. GAIRDNER, OF GLASGOW.—This year Professor Gairdner completes a period of thirty years continuous service at the University of Glasgow, as Professor of the Principles and Practice of Medicine. A committee has been formed to place on record the esteem and regard in which he is held by his former pupils, by presenting to the university a portrait of Dr. Gairdner, and also to found a scholarship in clinical medicine in the university.

RUSSIAN JEWS STOPPED ON THE GERMAN FRONTIER.—Owing to the prevalence of typhus fever, the German Government has prohibited Russian Hebrew immigrants from crossing the frontier. In consequence, the Russian frontier towns have become very much crowded, and it is feared that typhus fever will spread through all of the border towns. Most of the immigrants who have been stopped were on their way to America.

RIGID ENFORCEMENT OF IMMIGRATION LAWS.—Acting under orders from the Assistant Secretary of the Treasury, no more immigrants will be allowed to land simply on the assurance from some society that they will not become public charges. Any one who does not possess \$10, or who does not have a railroad ticket to his destination, will be detained and sent back to the country from which he came. It is said that under this rule the number of immigrants who may be sent back often amounts to as many as 500 on the days of the week when steamers are due.

RABIES IN PARIS.—According to the statistics of the Prefecture of Police, rabies has increased considerably during the past ten years. In 1880 there were 201 cases of canine rabies, and 61 persons were bitten. In 1891 there were 400 cases of canine rabies, and 143 persons were bitten.

THE ENGLISH PUBLIC EXECUTIONER.—Berry, who for some time has been well known in England as the public executioner, has resigned his position on account of the issuing of an order, authorizing medical officers of prisons to regulate the length of the drop required at executions. Berry has hanged two hundred criminals during the time in which he has held office. He has invented a few devices connected with the scaffold. He will now go on a lecture tour, and write a book.

NEW PUBLICATIONS.—With the month of March, the first copy of a new monthly appeared in Kingston, N. Y. It is to be known as the "Practitioners Monthly," and is edited by C. L. Dodge, M.D. and J. Chambers, M.D. *Annales de la Polyclinique de Lille*, a quarterly devoted to work done in the polyclinic at Lille, appeared for the first time in January. The Philadelphia *Polyclinic*, a journal of practical scientific medicine, edited by a committee of the Faculty and published quarterly by the Philadelphia Polyclinic and College for Graduates in Medicine, appears for the first time in March.

A PRODIGY CALCULATOR.—The Académie des Sciences, in Paris, have been examining Jacques In-

audi, the celebrated calculator. The most difficult problems in square and cube roots were given to him besides many such questions as, "If a person were given five francs every minute since the year one, how long would it be before he had the amount paid by the French to the Germans?" All questions asked him, he answered in an incredibly short space of time.

ANTI-CORSET MEETING.—We learn from a foreign contemporary that for a long time there has been a strong feeling in America against the corset, especially among the women of Canada. Recently in a town in Ottawa a largely attended anti-corset meeting was held, at which all the ladies present made a vow that they would no longer be slaves to that particular fashion. In the vicinity of the building in which the meeting was held, a large bon-fire was built, in which all the corsets belonging to the party were thrown.

INFANT MORTALITY IN FRANCE.—At a recent meeting of the Society for the Protection of Children in France, Dr. Rochard (Chairman) stated that France loses every year 250,000 infants, and that out of this number there are at least 100,000 whose lives could be saved with intelligent care.

THE TOXICITY OF THE BLOOD IN CASES OF ACUTE SUPPURATION.—Nissen¹ reports a number of experiments in which the blood of persons suffering from suppuration was injected subcutaneously and into the peritoneal cavity of mice. In all cases, blood from patients in the same clinic, but without suppuration, was injected as a control experiment, but in none of these cases was any effect produced upon the mouse. From the patient with suppuration, the blood was taken from a part of the body distant from the seat of the pus. In most of the cases, the mouse died within from two or three to twenty-four hours after a series of characteristic symptoms. After death, the mice showed hemorrhagic exudations, hepatization of large portions of the lung, enlargement of the spleen, and other indications that the injected poison may have been fatal by its action upon the blood of the animal.

BOSTON AND NEW ENGLAND.

MORTALITY FOR THE WEEK.—The death-rate for the past week in Boston has been unusually high, the total number of deaths reported having been 237, as against 196 the corresponding week last year, making the death-rate for the week 26.8. The number of persons who died over sixty years of age was 45.

DANGER FROM FUMIGATION.—In a small town, not many miles distant, a house was found to be on fire a short time after it had been fumigated. The following explanation, given at the investigation as to the cause of the fire, is an extract from the local paper: "The doctor thinks the fumes drove the rats from their holes, and becoming blinded, they jumped into the pan of burning sulphur, which adhered to their skins, and the rats returning to their holes, carried the blazing sulphur on their backs, thus setting the house on fire."

¹ Deutsche Med. Woch., No. 2.

MASSACHUSETTS LEGISLATURE. — The Committee on Public Charitable Institutions reported a bill authorizing the Governor to appoint seven trustees to erect at Medfield an asylum, at a cost of \$500,000, for one thousand chronic insane. The same committee reported an appropriation of \$10,000 for buying land and buildings at Westborough Insane Asylum. It was moved in the House to substitute a bill for the report of the Committee on Public Health leave to withdraw on the repeal of the compulsory vaccination laws. The substitute bill provides that school committees may exercise their discretion in allowing unvaccinated children to attend school. The matter was put upon the table. The same committee also reported inexpedient on the order prohibiting the manufacture of household articles in which arsenic is used. The Committee on Judiciary reported a bill providing that no attorney-at-law shall solicit employment for the purpose of enforcing a claim for damages against a person or corporation based on the negligence of any person or corporation. To violate the act, the solicitation must take place outside of the attorney's office.

TRICHINOSIS IN COLERAINE, MASS. — The epidemic of trichinosis which was reported a few weeks ago from the town of Coleraine is at an end, the last victim having died of the disease. There were in all four deaths, and about forty cases, most of which occurred in one large tenement block. An examination of the muscles of the case which has recently died showed them to be filled with trichinae.

NEW YORK.

A DEATH FROM CHLOROFORM occurred in the practice of Dr. A. H. Goelet on March 20th. The patient was a man of middle age, and the anesthetic was given by Dr. E. N. Delphy, in order to perform an amputation of the finger for gangrene.

A FALL FROM A WINDOW. — A man, thirty-four years of age, recently sprang, while delirious, from the window of an apartment on the third floor of his residence in Harlem, and his wife, while endeavoring to prevent him from doing so, was herself drawn out, and fell with him a distance of forty feet to the stone flagging below. Strange to say, neither were killed, and the husband was but little hurt. The wife was somewhat more severely, but not fatally, injured.

TYPHUS FEVER. — In his report on the health of the city for the week ending March 19th, Dr. John T. Nagle, Deputy Registrar of Records, says: "The deaths from typhus during the week were 13, which makes a total of 20 deaths from this disease since January 1st. Of the number of fatal cases, four were employees of the Board of Health, two employees of Riverside Hospital, North Brother Island, one of the Reception Hospital, and a policeman of the sanitary squad. These contracted the disease while in the service of the Board of Health, and their lives were heroically given as a sacrifice to their zeal in the discharge of their duties in guarding and protecting the public

from this terrible infection. Besides the four employees who have died in its service, there are still three of the employees of the department sick with typhus fever — one a sanitary policeman, and two employees of the Riverside Hospital, who contracted the disease while in the discharge of their duty. The disease, owing to the excellent and vigorous management of the Board of Health, seems to be stamped out, and the city saved from a typhus epidemic, which would not alone destroy many valuable lives, but would injure the commercial prosperity of the city. A singular observance of this disease was the very high percentage of deaths of the employees of the Board of Health, who contracted the disease from the Russian immigrants, and the low death-rate among the immigrants themselves. Whether this is due to enervation caused by overwork or to national characteristics, is not clear at present." Within a few days after this report the number of deaths from typhus was swelled to 29. As the total number of cases reported up to this time was 184, this is a mortality of 17½ per cent., and it may yet be increased to something like 20 per cent. by deaths among the quarantined patients and the attendants at North Brother Island.

Miscellany.

DRUNKENNESS AND CRIME.

SIR HENRY JAMES,¹ in response to a request for his opinion whether there is any general principle which is accepted by judges to regulate their decisions in cases where drunkenness seems to be an incentive to crime, has written a letter, in which he summarizes his views to the effect that in determining the legal character of the offence committed, drunkenness may be taken into account where it has established a condition of positive and well-defined insanity, or if it produces a sudden outbreak of passion occasioning the commission of crime under circumstances which, in the case of a sober person, would reduce the offence of murder to manslaughter; but in the case of minor assaults and acts of violence it can never form any legal answer to the charge preferred, but it may aggravate or mitigate the character of the act committed, probably aggravate it. As to the effect that should be given to drunkenness when determining the amount of punishment to be inflicted, he thinks no general rule can be laid down. Its existence may be considered, and may tend either in the direction of increasing or diminishing the punishment.

LESIONS PRODUCED BY THE TOX-ALBUMEN OF DIPHTHERIA.

WELCH² makes a further communication upon the work done under his charge in connection with the bacillus of diphtheria. Inoculation of the tox-albumen, free from bacilli and sterilized, were injected subcutaneously into guinea-pigs. The animal not only died but presented certain lesions in various parts of the body.

¹ Editorial, British Medical Journal, January 10th.

² Johns Hopkins Bulletin, March.

In cases in which animals have been inoculated with the bacilli, death usually occurs in one or two days. In inoculation with the toxic products alone, the inoculation period exceeded three weeks. The author concludes that it may be considered as established that the toxic products and not the bacilli themselves invade the tissues in diphtheria. This fact would at once suggest that the general lesions, (those produced at a distance from the seat of inoculation in animals and the situation of the local process in human beings), were the effects of the soluble poison diffused through the body. Hence it was desirable to demonstrate this assumption experimentally; and it is not unimportant to know that the lesions in the tissues produced by the bacilli and the toxic principle on the one hand and the toxic principle alone on the other are in perfect correspondence with each other. And, moreover, it would seem not to be superfluous to emphasize the occurrence of definite focal lesions in the tissues of the body produced by a soluble poison circulating in the blood.

THERAPEUTIC NOTES.

DISINFECTION OF THE MOUTH. — Dellevie¹ calls attention to several conditions, in which the mouth should be made as aseptic as possible. Several infectious micro-organisms are capable of living for indefinite periods in the mouth, in condition to carry infection if the opportunity presents itself. He has found that the following antisepsics may be used as mouth washes without injuring the teeth : corrosive sublimate 1 : 1500, B. naphthol 1 : 1000, thymol 1 : 1000, salicylic acid 1 : 350, saccharin 1 : 250, benzoic acid 1 : 100.

BENZOSOL, which has been introduced in Germany as a substitute for creasote, for the treatment of tuberculosis, is a white powder which is a chemical combination of guaiacol with benzoic acid.² It is said to possess all the therapeutic properties of creasote without its disadvantages. Hughes administers it as follows :

R. Benzosol	gr. lxxv.
Ess. menthae piperita	
Div. in trochesi no. x	gtt. ij.

M.

Sig. One or two tablets, immediately after meals, three times daily.

For a week, the patient takes three tablets daily ; during the next three weeks, six are taken daily ; during the fifth week, three are again taken daily ; finally, during the sixth week, none are taken ; then the same course is followed over again.

ACTION OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, UPON THE DEATH OF DR. D. HAYES AGNEW.

A SPECIAL meeting of the College of Physicians was held to take action upon the death of Professor Agnew who last year was President of the College. Dr. S. Weir Mitchell, President, occupied the chair. In opening the meeting he said :

" I have only to announce officially to the Fellows what is already known — the death of D. Hayes Agnew, sometime President of this College, and a Fellow since 1859.

" I leave to others to express in full the feeling of regret with which all medical men have heard of this loss. My own relations were those of friendly acquaintance and

more or less constant official connection as a Trustee of the University. I was made to feel that Dr. Agnew carried into his medical and official relations all the best qualities of a strong and vigorous manhood, and that the faith and creed by which he lived made itself distinctly felt wherever he went and whatever he did.

" Dr. Agnew seemed to me one of those well-balanced characters to whom the most brilliant success and the esteem of a nation bring no element of moral weakness.

" As a hard-working teacher of anatomy, from whom I rented a laboratory when neither of us was much known of men, I used to see him daily. In the closing years of his life of vast utility I was often called upon, as Chairman of the Committee on the Medical Department of the University of Pennsylvania, or as Vice-President of this College, to act and work with him. In the long interval of years between our early work and achieved success, we met but rarely, or as busy doctors do meet, but on renewed and closer intercourse I found him still the same man — stronger, more competent, but morally unchanged from what he was when we first met.

" As President of this ancient College I like to think of him as continuing the long line of illustrious physicians who have given to this chair an ever-growing value. Dr. Agnew was, I find, the third surgeon who had the honors of your Presidency. William Shippen, 1805, was second President ; Thomas Hewson in 1835, succeeded as sixth President. Then, save Dr. Ruschenberger, a naval surgeon, all have been physicians until Dr. Agnew's date. He became the thirteenth President in 1883, and served his full term."

This was followed by brief addresses by Dr. John Ashurst, Jr., Dr. W. W. Keen, and Dr. Alfred Stille, who submitted the following minute, which was adopted :

" The death of Dr. Hayes Agnew, recently President of this College, in the seventy-fourth year of his age and after a life crowned with honor and usefulness, calls for an expression of the sense entertained by the College of the gravity of the loss which it suffers, in common with the profession he adorned, the charitable institutions he served, and the community in which his skill did so much to lessen suffering and death.

" He began his professional life with no adventitious aid, yet by incessant industry, indomitable perseverance and singleness of purpose he attained to its highest rank. No temptation distracted his attention from the goal of his life ; neither extraneous sciences, nor general literature, nor the allurements of art, nor the pleasures of society. The undivided strength of his mind and his affections were devoted to enlarging the domain of surgery, not only in its operative methods, which he always subordinated to the welfare of his patients, but also in preparing for his profession a literary monument that might speak for him when his voice should be no longer heard.

" His minute acquaintance with anatomy, and his ambidextrous skill enabled him to perform with ease to himself and safety to his patients, operations which less accomplished surgeons hesitated to undertake.

" He possessed a certain magnetism of manner, quite independent of formality, that evidently proceeded from the heart, and drew all hearts to himself. Never frivolous, but always cheerful, he was dignified, grave and earnest, making all who heard him as a teacher and speaker, or in familiar intercourse, recognize in him, above all other things, the upright man. For he possessed the eloquence of conviction and the force of absolute honesty in all his statements, and thereby drew to himself an enthusiastic admirers and disciples the successive classes of students whom he taught."

Professor Agnew was in the seventy-fourth year of his age. He suffered some months since with influenza, resulting bronchitis, but believed that he was recovering from it, and was about as usual, attending to his patients, when about a week before death he grew worse. It was not thought that the illness would be fatal until two days before death occurred, when angina attacks supervened, and he finally died of uræmia. At the autopsy it was

¹ Deutsche Med. Zeitung, February 22d.

² La Semaine Médicale, January 13th.

found that his suffering was partly due to atheroma of the cardiac valve and coronary arteries. There was marked renal degeneration, and pelvic inflammation caused by a renal calculus.

The funeral services were held at the Second Presbyterian Church, of which he had been a member, and were largely attended by his medical friends, among whom were noticed Dr. A. Jacobi, of New York, and Dr. Hunter Maguire, of Richmond, Va.

OBITUARY. JOHN AMORY JEFFRIES, M.D.

JOHN AMORY JEFFRIES, M.D., M.M.S.S., died of pneumonia, in Boston, March 25th, aged thirty-two years. Dr. Jeffries graduated from Harvard College in the class of 1881, and from the Medical School in 1884. After a year spent in Europe he settled in Boston, where he had since practised. At the time of his death he was Physician in the Department of Nervous Diseases at the Boston Dispensary and Assistant Physician to the Nervous Department of the City Hospital. He was a member of the American Neurological Association, the American Pediatric Society, the American Association for the Advancement of Science, the American Association of Naturalists, and of several Boston medical and scientific societies. He had written several papers both on medical and on scientific subjects, and had been a frequent contributor to the *Journal*.

Dr. Jeffries had, from an early age, been a student of natural history. Even before he entered college he was well known as an ornithologist. In college he did much original work and received highest honors in natural history. After graduating from the Medical School his previous training and his familiarity with the microscope led him to devote what time he could spare to bacteriological study, in the School laboratories. In practical medicine he was especially interested in nervous disease.

He was a hard worker. As a student of science his judgment was good, his reasoning clear, and his methods thorough; he was not led astray by enthusiasm. Had he lived he would undoubtedly have made valuable contributions to scientific medicine.

He leaves many friends both in and out of the profession who sincerely mourn his loss.

Correspondence.

FEMORAL AND VENTRAL HERNIA IN WOMEN.

NEW YORK, 18 East 32d St., March 22, 1892.

MR. EDITOR:—Having read the recent paper upon "Femoral and Ventral Hernia in Women" by Dr. H. O. Marcy, of Boston, I beg the courtesy of your columns for a few remarks suggested by that paper; and I trust they will be received by the author of it in the same friendly spirit in which they are given.

Without attempting any thorough review of the paper, I desire simply to point out certain defects, or, perhaps better, certain omissions which to my mind seriously weaken the arguments which Dr. Marcy has set forth in favor of operative procedure in the treatment of femoral and ventral hernia.

The first and most important omission is in regard to the result of his operations. Although he states that he "began to use the buried animal suture in operating for the cure of hernia in 1871," and has continued to use it since, nothing is said as to results other than the general statement, that, so far as he has been able to learn, there has not been a single recurrence. Without giving the number of cases operated upon, as well as the number followed beyond the

¹ Reprint from Transactions of American Association of Obstetricians and Gynecologists, 1891.

period when relapses may occur, such general statements are valueless so far as any scientific estimate of the efficacy of the operation, is concerned.

Although Dr. W. T. Bull's results are seriously criticised, it is well to bear in mind the fact that his is the only large collection in this country, where the cases have been followed a sufficient length of time to enable one to draw satisfactory conclusions. In his article, "On the Radical Cure of Hernia, with Results of One Hundred and Thirty-four Operations,"² Dr. Bull stated that with the methods he had tried there was no prospect of attaining a radical cure of any form of hernia; yet he admitted that the attempt to cure was desirable and every worker in this field has been watched with the greatest interest, in the hope that some one would one day discover the prize that others had looked for in vain.

Yet one who is familiar with the literature of hernia, who has followed the history of the so-called "Radical Cure," and has seen one method after another evolved, run a similar course of praise, approval, neglect, and then after a brief life-history pass into the list of obsolete operations — such a one will be pardoned for being somewhat skeptical, or at least not over-sanguine, when a new method is proposed, particularly when that method has not been subjected to the test by which the preceding methods have been tried and found wanting, namely, the test of time.

The history of Wood's operation, which has been more extensively tried, and received perhaps more nearly universal approval than any other, is significant. To quote a recent writer: "Many tried it, and as now with the open method, asserted their success; but Mr. Kingdon of the London Truss Society demolished their pretensions one after another by the stern logic of facts, and the men who were reported as successful examples of the radical cure were fitted by him with trusses. Time has proved the truth of its failure."

It seems to me that no new method should be entitled to serious consideration until it has been subjected to this test of time.

It must not only show, as many other methods have shown, seventy, eighty, or ninety per cent. of so-called "cures"; but, sufficient time having intervened, those "cures" must be followed up, and shown not to have relapsed. Dr. Bull, in his paper upon "Cases of Hernia which have Relapsed after Various Operations for Radical Cure,"³ emphasized the importance of this element, time; and he showed that until the five-year limit had been passed a *cure* could not be asserted with confidence. During the past year upwards of fifty cases of relapsed inguinal and femoral hernia have been treated at the Hospital for Ruptured and Crippled. Among these were many that had been published as "Cures."

In regard to the method of operating upon femoral hernia advocated by Dr. Marcy, there is nothing essentially new in this method. The principle of closing the femoral canal by means of buried sutures, both silk and animal, has been repeatedly tried, and the recent statistics of hernia operations at Billroth's Klinik, from 1877 to 1889, reported by Haidenthaler,⁴ are directly in point. Of fifty-four cases of femoral hernia treated in part by suture of the canal, and in part by simple excision of the sac and closure of the external wound, thirty-seven and one-half per cent. of the cases in which the canal had been sutured relapsed, while only twenty per cent. of recurrences followed the simple excision of the sac.

If better, or even as good, results follow the simpler operation, it may well be doubted if it be wise to attempt a complicated suture which in the hands of any but the skilled anatomist would add to the risk of the operation.

The principle of operating upon most cases of ventral hernia is open to serious objections. The risks associated with conservative treatment in these cases are, I think, greatly over-estimated. In a very large number of cases of adherent and irreducible umbilical hernia treated at

² Medical News, July 5, 1890.

³ New York Medical Journal, May 30, 1891.

⁴ Archiv. f. Klin. Chirurg., 1-90.

the Hospital for Ruptured and Crippled, strangulation is an extremely rare occurrence. This, added to the fact that ventral hernia, by no means infrequently follows abdominal section, even in the hands of the best surgeons and in favorable cases, makes it reasonable to doubt the advisability of extending the "Radical Cure" to the class of cases in question.

In conclusion, let me say that I hope this will not be regarded as an attempt to discourage the operative treatment of hernia in general, but only an effort to emphasize the importance of submitting all methods of operation, to the test of time, and of judging their relative merits by the number of relapses. Very truly yours,

WILLIAM B. COLEY, M.D.,

Assistant Surgeon to the Hospital for Ruptured and Crippled of New York (Hernia Department).

INDUCEMENTS FOR ADVERTISING.

BROOKSIDE, MASS., March 23, 1892.

MR. EDITOR:—Well knowing your progressive spirit, which enables you to keep the JOURNAL abreast of the times, I send you the enclosed, which may supply a few hints for the advertising department.

Louisville, Ky., March 17, 1892.

DEAR DOCTOR:—If you will advertise with us, we will take three-quarters of the amount of advertising out in board and medical services, and one-quarter in cash; the boarder to be a deserving and agreeable one. We could not well enter into an arrangement differing from the above unless you desired to pay all cash, in which case you will please notify us of your desire. Independent from the above, could you propose a compensation for any business we might send you through personal efforts. We reach every one of the 3,117 doctors in Kentucky and circulate extensively throughout ten Southern States. Enclosed please find rates. Send for a sample copy. It is a stylish one. Observe its editorial management and the good business it contains. Although you are some distance from here, the reputation of your institution should fill it with patients from all parts of the country. A reply by return mail will greatly oblige.

Your friends, THE M. P. CO.

Board and washing will be exchanged hereafter for half-page advertisements. The rates will vary according as the person to be boarded and washed is simply weak-minded or very much excited. In the latter case I should expect a cut to be furnished with the advertisement. Driveling idiots with large appetites will not be admitted. Towels and soap furnished by the management, but patients are expected to bring their own water. How does this kind of exchange strike you? Yours truly, C. W.

A GERM MANIAC.

NEW YORK, March 22, 1892.

MR. EDITOR:—I enclose some verses entitled, "A Germ Maniac," which were written when taking a course in bacteriology in the Michigan University Medical School.

For five long hours I work on germs

In hanging drop of rich beef-tea;
Germs which, beneath the microscope,
I strain my eyes to see.

I bake them, boil them, roast them too,
Or poison those I find;
I steam them, cage them, then go home,
And leave the germs behind.

Behind! Oh woe, oh woe is me!
They go where'er I go,—
Before, behind, without, within,
Around, about, below.

Thousands and thousands in my mouth,
And thousands in my hair!
I fear to breathe them in my lungs,
With every breath of air.

I know they rest upon my cheek,
I brush them with my hand;
They're on the hand! — I wash them off;
But water is their land.

I seek the cooling air of night;
The earth is dark, the hour is late;
The stars upon the heavens lie,
Like germs upon a plate.

Germs, germs by day and germs by night,
Germs in my brain must be,
Unless I think of something else
They'll make a "stick" of me!

I have felt that they might express enough of the universal feeling of beginners in bacteriological studies to find a place in your Journal. Respectfully, H. B.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, MARCH 19, 1892.

CITIES.	Estimated population for 1890.	Reported deaths	Percentage of deaths from					
			Deaths in sev. under five years.	Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhoeal diseases.	
New York	1,515,361	885	32	16.83	20.46	2.75	2.69	4.73
Chicago	1,069,850	445	197	15.84	24.86	1.32	1.66	7.04
Baltimore	886,343	264	134	15.08	19.04	2.52	.56	9.24
St. Louis	451,770	185	73	14.04	11.34	.54	4.86	2.16
Boston	448,471	223	70	9.00	20.25	2.25	.90	3.60
Pittsburgh	439,438	188	62	32.50	—	—	—	—
Philadelphia	426,908	119	47	15.48	25.89	.56	2.58	8.60
Cleveland	282,080	102	44	10.12	13.80	—	—	6.88
New Orleans	242,030	—	—	—	—	—	—	—
Milwaukee	240,000	107	53	6.51	26.64	.30	—	3.72
Portland	240,000	81	32	29.52	11.07	4.86	1.23	19.68
St. Paul	239,000	125	45	16.58	20.77	.26	1.52	3.96
Nashville	76,168	38	16	41.05	21.04	—	—	—
Charleston	65,165	2	2	4.00	12.00	—	—	—
Portland	36,425	14	1	—	21.42	—	—	—
Worcester	84,145	29	11	17.25	—	—	3.45	6.90
Providence	71,600	12	6	51.67	18.16	—	—	—
Fall River	74,280	30	10	33.33	29.99	—	—	—
Cambridge	70,028	23	10	18.58	14.80	—	3.70	11.11
Lynn	53,727	36	4	3.82	26.95	—	—	3.85
Lawrence	44,654	28	4	14.28	14.28	—	—	—
Springfield	44,141	14	4	12.86	—	—	—	12.50
New Bedford	40,733	17	4	23.53	5.88	—	—	—
Salem	30,801	19	3	5.26	10.52	—	—	5.26
Chester	27,900	13	4	7.69	24.07	—	—	7.69
Haverhill	27,412	9	—	—	—	—	—	—
Tarzwell	25,145	9	5	55.56	11.11	—	—	—
Gloucester	24,651	6	1	16.67	16.66	—	—	—
Newton	24,379	11	2	9.09	18.18	—	—	9.09
Malden	23,631	4	0	—	—	—	—	—
Pittsburg	22,037	5	2	—	20.00	—	—	—
Watertown	18,427	2	—	—	—	—	—	—
Pittsburg	17,281	4	0	25.00	—	25.00	—	—
Quincy	16,723	4	1	25.00	—	—	—	—
Northampton	14,950	6	3	16.66	33.33	—	—	16.66
Newburyport	13,947	7	4	—	—	—	—	—
Wellesley	11,197	5	1	—	—	—	—	—
Hyde Park	10,193	3	1	—	—	—	—	—
Peabody	10,158	2	0	—	—	—	—	—

Deaths reported 3,028: under five years of age 1,121; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 452, acute lung diseases 601, consumption 331, diphtheria and croup 171, scarlet fever 54, typhoid fever 46, diarrhoeal diseases 43, measles 33, erysipelas 23, cerebro-spinal meningitis 22, whooping-cough 16, typhus fever 13, malarial fever 6, puerperal fever 3, small-pox 2.

From Typhoid fever Chicago 18, New York 7, Springfield 4, Brooklyn 2, Cincinnati and Washington 3 each, St. Louis 2, Cleveland, Pittsburgh and Charles'ton 1 each. From measles New York 24, Brooklyn 6, Chicago 2, Cleveland 1. From erysipelas New York 8, St. Louis 4, Boston 3, Chicago and Brooklyn 2 each, Milwaukee, Worcester, Cambridge and Quincy 1 each. From cerebro-spinal meningitis Chicago 7, New York 6, Brooklyn and Washington 2 each, St. Louis, Cleveland, Worcester, Taunton and Gloucester 1 each. From whooping-cough St. Louis 4, New York 3, Chicago, Boston and Washington 2 each, Brooklyn, Cincinnati and Pittsburgh 1 each. From typhus fever New York 13. From malarial fever New York and Brooklyn 3 each. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,735, for the week ending March 12th, the death-rate was 22.9. Deaths reported 4,469: acute diseases of the respiratory organs (London) 454; whooping-cough 170, measles 113, diphtheria 48, diarrhoea 42, fever 15, scarlet fever 13, small-pox (London and Liverpool 2 each, Oldham 1) 5.

The death-rates ranged from 16.5 in Newcastle-on-Tyne to 32.8 in Swansea; Birmingham 20.5, Bradford 24.7, Hull 19.9, Leeds 23.6, Leicester 19.7, Liverpool 30.0, London 22.1, Manchester 27.2, Nottingham 26.7, Portsmouth 19.1, Sheffield 19.9.

METEOROLOGICAL RECORD,

For the week ending March 19, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Date.	Barometer		Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.
	Date mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...13	29.89	27	32	21	49	43	46	W.	W.	21	20	C.	C.
M..14	29.98	24	25	14	45	45	45	N.	N.	21	21	C.	C.
T..15	29.98	24	25	14	45	45	45	S.	S.	10	10	O.	O.
W..16	30.33	24	33	15	52	61	56	W.	N.	10	10	O.	C.
F..17	29.28	26	35	16	58	41	50	N.W.	N.E.	9	5	F.	F.
S..18	29.17	25	35	22	100	100	100	E.	N.E.	20	19	R.	1.35
S..19	29.44	31	35	27	90	48	68	S.W.	S.W.	24	21	N.	C.
MEAN	29.99	26	33	17	65	55	60			18	17		.26

* O. cloudy. C. clear. F. fair. G. fog. H. hazy. S. smoky. R. rain. T. threatening. N. snow. + Indicates trace of rainfall. **MEAN** for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 19, 1892, TO MARCH 25, 1892.

CAPTAIN BENJAMIN MUNDAY, assistant surgeon, U. S. A., granted leave of absence for one month with permission to apply for an extension of one month.

FIRST-LIEUT. F. DE WITT, assistant surgeon, U. S. A., granted leave of absence to include May 16, 1892, at which date his resignation has been accepted by the President to take effect.

PROMOTIONS.

LIEUT-COL. JOSEPH C. BAILEY, assistant medical purveyor, to be surgeon with the rank of Colonel, March 9, 1892, Vice Morris retired from active service.

MAJOR WILLIAM D. WOLVERTON, to be assistant medical purveyor, with the rank of Lieut-Col., March 9, 1892, Vice BAILEY promoted.

CAPTAIN JOHN O. SKINNER, assistant surgeon, to be surgeon, with the rank of Major, March 9, 1892, Vice WOLVERTON promoted.

APPOINTMENTS.

To be assistant surgeons with the rank of First-Lieut., FRANCIS A. WINTER of Alabama, March 9, 1892, VICE DE HANNE retired from active service. WILLIAM E. PURVANCE, of Illinois, March 9, 1892, Vice STEINMETZ, retired from active service.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 26, 1892.

A. A. HOELING, medical inspector, ordered as president, Naval Medical Examining Board.

J. L. NEILSON, surgeon, ordered as member and recorder of Naval Medical Examining Board.

T. C. WALTON, medical inspector, granted six months' extension of leave, with permission to remain abroad.

CHARLES PERRY BAGG, of Los Angeles, Cal., commissioned an assistant surgeon in the Navy.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF PHYSICAL EDUCATION.

The Seventh Annual Meeting of this Association will be held April 7-9, 1892, at the Drexel Institute of Art, Science and Industry, Philadelphia.

Five sessions of the American Association for the Advance-

ment of Physical Education will be held at the Drexel Institute, beginning on the evening of Thursday, April 7th, which evening will be devoted to an address by the President of the Association, and to a reception given by the Drexel Institute to the members of the Association and invited guests. At the second session, on Friday morning, April 8th, topics of a general nature will be considered. The afternoon session on Friday will be devoted to papers and discussions (a) on Delsartism and its Relations to Physical Education, and (b) on the Athletic Question. The evening of Friday will be given up to an exhibition of School Gymnastics. The fifth public session, on Saturday morning, April 9th, will be devoted to the consideration of some Educational aspects of Physical Training. Free discussion of all papers will be invited.

The Pennsylvania Railroad Company offers special rates to parties of fifty or more.

The Continental Hotel, Philadelphia, which offers a per diem rate of \$2.50 (American plan), will be the headquarters for visiting members of the Association.

A cordial invitation has been given to the members of the American Association for the Advancement of Physical Education, by the Woman's College, the Bryn Mawr School for Girls, and the Maryland Asylums for the Blind, all of Baltimore City, Maryland, to visit and inspect the grounds and the above-mentioned institutions on Thursday, April 7, 1892.

Members may arrange to accept the Baltimore invitation, and proceed to Philadelphia in season to attend the first public session of the Seventh Annual Meeting of the Association at 8 P. M.

Inquiries and applications for membership may be addressed to the Secretary of the Association, at Cornell University, Ithaca, N. Y., or to the President, 5 Brimmer Street, Boston, Mass., or to Mr. Thomas, Chairman of Local Committee of Arrangements, Girard College, Philadelphia.

EDWARD M. HARTWELL, *President.*

EDWARD HITCHCOCK, JR., *Secretary.*

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—The annual meeting will be held Monday, April 4, 1892, at 8 o'clock, at 19 Boylston Place.

Dr. W. H. Baker: "Hypertrophic Elongation of the Cervix Uteri, a new operation for its relief!" Discussion by Drs. C. P. Strong, G. H. Washburn and F. H. Davenport.

Dr. C. J. Blake: "Acute Congestion of the Upper Portion of the Tympans."

Selection of officers.

Electoral of honorary and associate members.

Report of auditing committee.

JOHN C. MUNRO, M.D., *Secretary.*

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.—There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, April 6, 1892, at 8 o'clock.

Dr. Alfred Worcester, of Waltham, will report cases of Appendicitis, and will urge early operation.

Dr. J. W. Elliot and Dr. M. H. Richardson: "Conclusions from a Study of Cases of Appendicitis."

Dr. E. O. Otis: "A Case of Broken Neck with Autopsy."

Dr. W. L. Walton will report additional cases of Cervical Dislocation, with Recovery, and will show photographs illustrating the characteristic deformity.

CHARLES L. SCUDDER, M.D., *Secretary*, 94 Charles Street.

RECENT DEATHS.

J. ROBERT EMBREE, M.D., died in Colorado Springs, on March 20th, aged thirty-three years. He graduated from the College of Physicians and Surgeons in New York, in 1883. He served as house-surgeon at the Chambers Street Hospital for three years and later as physician at the New York Hospital.

John AMORY JEFFRIES, M.D., M.M.S.S., died March 25th, aged thirty-two years.

DAVID C. COMSTOCK, M.D., of New York City, died March 24th, aged fifty-two years.

LEDYARD VAN RENSSLAER, M.D., of Burlington, N. J., died March 24th, aged forty-eight years.

CARL CHEDÉ, M.D., Professor of Obstetrics at the University of Leipzig, died March 14th, aged seventy-two years. He had achieved a world-wide fame in obstetrics, his name being associated especially with a method of expressing the placenta.

BOOKS AND PAMPHLETS RECEIVED.

Laparotomy under Cocaine. By Emory Lanphear, M.D., Ph.D., Kansas City, Mo.

Are Inebriates Curable? By T. D. Crothers, M.D., Hartford, Conn., Superintendent Walnut Lodge Hospital, Hartford, Conn.

The Indications for Colotomy. By Charles B. Kelsey, M.D., New York. Detroit, Mich.: George S. Davis. Reprint. 1892.

Original Articles.

NOTES ON TYPHOID FROM 676 CASES ADMITTED TO THE BOSTON CITY HOSPITAL IN 1890 AND 1891.¹

BY A. L. MASON, M.D.

As typhoid fever is chiefly a hospital disease, few physicians being called upon to treat a large number of cases in their private practice, it is interesting from time to time to compare the hospital reports from various sources with reference to the average results attained, so that by the light of general experience and progressive therapeutics we may try to determine how far our methods may be improved, and whether it is a duty to insist upon any systematic plan of treatment with the hope that a further saving of life may be effected as has been elsewhere claimed. I refer especially to the bath-treatment of Brand, and to intestinal antisepsis. With the exception of 87 cases reported by Drs. Edes and Stedman, in the Boston City Hospital Reports, Vols. II, III, Brand's system of immersion in the cold bath has not been adopted at the City Hospital, but pyrexial symptoms have been met by cold sponging and affusions, with the internal administration of antipyretics, antisepsics and tonics. Such other dietetic, stimulating and symptomatic measures have been applied as each individual case has demanded.

With the co-operation of my colleagues and the valuable assistance of Dr. Augustus S. Knight, who has given much time and attention to this subject, I am able this evening to present the results in a series of cases extending through the last two years.

During 1890 and 1891, 676 cases of typhoid fever were entered upon the records of the City Hospital. Of these, 70 were fatal, 10.4%. This includes all cases, mild, moribund and doubtful, which entered the hospital during those years.

The diagnosis, "typhoid fever," is made provisionally in a certain number of cases which result fatally, but which present symptoms by no means always typical of that disease, some entering in a moribund, others in a delirious or unconscious state. Of such cases there were 18 in the present series, 15 moribund, that is, dying within three days after admission, and at least three of doubtful diagnosis. There were autopsies in three of them only, and where post-mortems are few, owing to the law which requires the written consent of friends, verification of the diagnosis is often impossible. Indeed, there were but 15 autopsies out of the 70 fatal cases, therefore the notes which follow must be mainly clinical rather than pathological.

During the same period, 47 cases were classed as "febricula," a diagnosis which probably covers some abortive typhoids.

In 33 cases, according to the charts, defervescence took place before the sixteenth day, but the date of commencement was often inexcavably determined, and these cases, which were entered in the books as "typhoid fever," are included in the series.

So many accidental circumstances affect the result in typhoid fever that it seems almost impossible to determine numerically the proportion of recoveries which may be due to therapeutic measures. Such factors are the age, sex, and previous condition of the patient, the

period of the disease when he comes under treatment, and the concurrence of other afflictions which lessen the chances of recovery. The virulence of the disease may vary at different times and in different countries, so that no practical conclusions can be drawn from a small number of cases. How large that number should be in order to eliminate chance is also uncertain.

Thus if we divide our 676 cases into thirteen series of 50 cases each, it is found that the mortality in the different series varied from 6% to 20%.

Between six series of 100 consecutive admissions each the death-rate ranged from 6% to 14%; whereas three series of 200 cases each differed by one per cent. only, namely: 10%, 10.5% and 11% respectively. But in two series of 300 cases each there was a difference of more than two per cent in the mortality, namely: 9½% and 11½% respectively.

In the hospital there are three medical services to which the cases, as admitted, are allotted in turn. To show still further the fallacy which may arise from the attempt to draw conclusions from small numbers of cases I may state that one of the services received 54 consecutive cases without a death. Six of these patients had relapses. Again there were:

31 cases without a death.
42 " with one death, equal to 2.4 per cent.
30 " " one death, " 3.3 " "
46 " " two deaths, " 4.3 " "
39 " " one death, " 2.5 " "
326 cases, with five deaths, equal to 2 per cent.

These figures do not compare unfavorably with some results of which we read as having been brought about by Brand's method in no larger numbers of cases. But as before stated the mortality in our whole series was 10.4%.

For purposes of comparison, I have selected the very interesting statistics of Dr. F. E. Hare, of the Brisbane Hospital, Queensland,² as being impartial, logically drawn up, and relating to a sufficient number of cases to admit of practical conclusions. In that institution before 1887, under the expectant plan, it was found that in three series of 600 cases each the death-rate varied between 14.3% and 15.3%, or only one per cent. So the conclusion was that groups of 600 cases were large enough to allow an estimate of the comparative effects of treatment when Brand's method was adopted, since the probable error from accidental causes would be small.

Therefore our series of 676 cases may be regarded as a suitable number for comparison in the future or with the records of the past, while the results in smaller groups of 100, 200, or 300 cases may so vary as to be of little value.

GENERAL CONSIDERATIONS.

Season.—Although typhoid fever is an autumnal disease, I think that more cases than formerly come to the hospital in the winter and spring months. Thus in these two years the admissions have been as follows:

January	17	July	63
February	16	August	97
March	20	September	165
April	12	October	139
May	22	November	63
June	27	December	29
Total, 676; 40, or 60% in August, September and October; 227, or 33%, between July 1st and November 1st.			

¹ Read before the Boston Society for Medical Improvement, January 25, 1891.

² The Practitioner, March, 1891.

Locality. — The records contain little evidence that typhoid fever was contracted away from the city in any large proportion of cases. About ten per cent. were recently arrived immigrants or "transients," that is, persons who had been in Boston less than one month. Some of these may have brought the disease with them, and others may have picked it up during visits to the country, but probably nine-tenths of the cases originated in Boston.

The 70 fatal cases were distributed as follows:

City proper	33
South Boston	12
Roxbury	8
Charlestown	6
East Boston	4
Suburban	4
Hull	1
Unknown	2
Total	70

Among these were:

Recent immigrants, or "transients"	6
Residents of less than 1 year	6
" " 5 years	20
" " 10 years	10

Total	42
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The birth-places of the fatal cases were as follows:

Massachusetts (11 of foreign parents)	19
British Provinces	19
Ireland	19
United States (outside Massachusetts)	7
England	1
Scotland	2
Sweden	1
Russia	1
Unknown	1
Total	70

Age. — Early age has an important bearing on the prognosis, as has been a matter of common observation. Hölscher's 2,000 autopsies in patients who had died of typhoid showed but six girls and two boys under ten years of age. Among these were two infants of two months and nine months respectively. Fifty-six cases were over fifty years of age, and three over seventy years.

The mortality according to ages in our series is appended.

Age.	Cases.	Deaths.
Under 5	2	0
5 to 10	18	6
10 to 15	45	2
Totals	65	2 = 3%
15 to 20	120	13
20 to 25	207	25
25 to 30	137	9
30 to 35	59	8
Totals	523	55 = 10.5%
35 to 40	32	1
40 to 45	14	1
45 to 50	9	2
50 to 55	8	2
55 to 60	2	1
60 to 65	2	0
70 to 75	1	0
Unknown	20	6
Totals	88	13 = 14.8%

It will be seen that the small fatality among children and the high death-rate after thirty years of age counterbalance each other, leaving the general mortality as stated above at 10.4%.

Of the two patients who died before or within the

^a Münchener Med. Wochenschrift, January, 1891.

sixteenth year, one was a boy of fifteen who entered during a relapse in the fourth week and died on the thirtieth day from pulmonary oedema and exhaustion. The other was a girl of thirteen years who came in on the sixth day and died on the twenty-ninth day of simple pyrexial exhaustion.

Between the ages of fifteen and twenty there were 120 admissions and 13 deaths. Seven of these were females, all of whom died of pyrexial exhaustion, complicated in one case by tuberculosis and in another by pneumonia and pregnancy. Of the six males two had no complications. One was a very doubtful case with symptoms indicating meningitis, fatal on the ninth day. Two died from perforation of the bowel at the age of nineteen, and one from intestinal hemorrhage at the same age, this being the earliest period of life at which these fatal accidents occurred.

Between the ages of twenty and thirty, 344 patients entered and 34 died, namely, 12 males and five females from febrile exhaustion; two males and three females from perforation; nine males and one female from intestinal hemorrhage; two with chronic Bright's disease. Of the above number, two had also delirium tremens and two pneumonia.

Beyond the age of thirty were 127 cases with 15 deaths, or 11.8%. With advancing years other degenerative changes were more frequent factors in producing the fatal result. Thus phthisis, chronic Bright's disease, chronic mitral insufficiency and sudden syncope from cardiac weakness were accountable for one death each. Two died with delirium tremens; two from perforation of the bowels; three from hemorrhage; six from febrile exhaustion, which was complicated in one case by pneumonia and in one by syphilis.

Time of Admission. — Other things being equal, delayed admission is regarded as greatly increasing the danger of death from exhaustion in typhoid fever.

Let us see the bearing of our figures upon this point. The records state that the patients entered as follows:

DATES OF ADMISSION.		
	Cases.	Deaths.
First week	269	30 = 11%
Second week	294	22 = 7.4%
Third week	87	9 = 10.3%
Fourth week	12	3 = 25%
Not stated	14	6 = 43%
Totals	676	70

Thus more than one-third of our cases entered during the first week, but still the mortality was higher than among those who entered during the second and third weeks. This may be accounted for in two ways: (1) By error in statement as to the beginning of the disease; (2) By the fact that the severer the onset the earlier patients seek the hospital.

The mortality was highest among those who entered in the fourth week and those about whom no information on this point was elicited.

Moribund. — Fifteen patients were in such bad condition on admission that they died within three days, namely:

Died within twelve hours	4
Died within twenty-four hours	2
Died within forty-eight hours	3
Died within three days	6

Sex. — Of the total admissions 445 were males, 231 females; nearly two to one. This is about the usual proportion. Forty-three males died, or 9.6%; and 27 females, or 11.6%. The mortality among the women

was two per cent. greater than among the men, as is usually the case in this disease, and this disproportion is in no way due to the intestinal lesions, which are much more fatal to men, as the following table shows :

Recognized perforations of bowel:		
Males 6 = 1.3%	Females 3 = 1.3%	Total 9 = 1.3%
Intestinal haemorrhages:		
Males 27 = 6%	Females 5 = 2.1%	Total 32 = 4.7%
Haemorrhage was fatal in 14 cases:		
Males 11 = 2.6%	Females 3 = 1.3%	Total 14 = 2%

Intestinal accidents as a whole, occurred in 41 cases, namely : males 33 (7%), females 8 (3.5%), total 41 (6%). They were fatal in 23 cases : males 17 (4%), females 6 (2.6%), total 23 (3.4%).

If then we deduct from the general mortality the mortality from intestinal lesions *per se*, we have for the two sexes the following :

Males:		
General mortality in 445 males	9.6%	
From intestinal lesions	4%	
From other causes	5.6%	
Females:		
General mortality in 231 females	11.6%	
From intestinal lesions	2.6%	
From other causes	9%	

Thus it appears that the death-rate, apart from intestinal perforation and haemorrhage, is 3.4% higher among the females than the males.

Effect of Cold Baths on Intestinal Ulcers.—Although Brand, in his earlier publications, thought that his method would greatly reduce the frequency of relapses and the danger from the intestinal lesions, this has not been borne out by later experiences on the part of others. To compare, for instance, our 676 cases with 1,173 cases treated after Brand's method by Dr. Hare at the Brisbane Hospital, with a mortality of 7.84%, we find the following results :

Brisbane Hospital:		
Males 739.	Fatal cases 69 = 9.3%	
Females 454.	Fatal cases 23 = 5.3%	
Boston City Hospital:		
Males 445.	Fatal cases 43 = 9.6%	
Females 231.	Fatal cases 27 = 11.6%	
Perforations of the bowel:		
Brisbane. Males 27 = 3.6%	Females 7 = 1.6%	
Boston. Males 6 = 1.4%	Females 3 = 1.3%	
Fatal hemorrhages:		
Brisbane. Males 13 = 1.7%	Females 3 = .69%	
Boston. Males 11 = 2.6%	Females 3 = 1.3%	
Fatal intestinal lesions, as a whole:		
Brisbane. Males 5.4%	Females 2.5%	
Boston. Males 3.7%	Females 2.6%	
Total mortality from intestinal lesions:		
Brisbane Hospital (Brand's method)	4.2%	
Boston City Hospital	3.4%	

From this comparison it will be seen that under Brand's method of bathing, the death-rate among males was about the same as ours, while among females it was not half as high as that which obtained at the City Hospital. The mortality from the severity of the intestinal lesions was somewhat in our favor, therefore, the reason for our higher death-rate must be sought chiefly in the large number of females who died from other causes, that is, from conditions peculiar to their sex and from their feeble resistance to pyrexial exhaustion. It is in preventing this exhaustion that the virtue of Brand's method seems to lie.

Perforation.—Nine cases, six males, three females. This accident occurred in two patients within forty-

eight hours after admission; twice in relapses, and in one patient who had aborted. Several other fatal cases presented symptoms of perforation, not in a typical manner, and autopsies were not obtained. The earliest recognized perforation occurred on the nineteenth day of the disease.

Haemorrhages.—Of the 32 cases of haemorrhage from the bowels, 14 were fatal. One died within forty-eight hours after entrance. The earliest fatal haemorrhage was on the twelfth day of the fever and no patient died from the effect of a single haemorrhage. Two had also delirium tremens and died on the fourth and sixth days after admission respectively. Two others, with complicating nephritis, had fatal bleeding from the bowels. Transfusion of a saline solution was resorted to in three cases, two males and one female. One recovered and two died from recurrent haemorrhage.

GENERAL COMPLICATING CONDITIONS.

Phthisis.—There were seven cases of phthisis of whom three succumbed.

Pneumonia.—Thirty-four cases had pneumonia; 28 recovered and six died.

Pleurisy complicated 11 cases, of whom three died.

Bronchitis was noted as a severe symptom in 74 cases (11%); and in two this was a complication which had much to do with causing death.

Edema—Dangerous edema of the lungs occurred in 25 cases, of whom 10 died.

Nephritis.—In 60 cases (nearly 10%) the urine had albumen and casts. At least three of these had chronic Bright's disease and proved fatal. Twelve others died, in whom the nephritis was probably an acute process. Besides, there were many cases of febrile albuminuria.

Cardiac.—There were 12 cases of chronic valvular disease, of whom two died; and two cases of acute endocarditis, one fatal. One patient had acute fibrinous pleuritis and pericarditis, and acute nephritis.

Diarrhaea was present in about half the cases, but was the chief cause of exhaustion in five cases only.

Hyperpyrexia was noted in but three fatal cases, two males and one female. The latter had extreme distension. The highest temperature recorded was 108° F.

Delirium Tremens.—Alcoholism was one of the gravest sources of danger in a large number of cases, and was no doubt responsible for many of the cardiac, renal and pulmonary complications which contributed to fatal exhaustion. Delirium tremens was present in eight cases, of which five resulted fatally at an early period, twice accompanied by intestinal hemorrhages and once by chronic Bright's disease. Three cases recovered.

Parotitis.—Of two cases of parotitis one died.

Pregnancy complicated the fever in seven cases: six normal pregnancies, one fleshy mole. Four recovered without aborting. One gave birth to a seven months' child weighing two and a quarter pounds, at the beginning of convalescence, which went on to complete recovery. The child also lived, and, at the end of seven months of careful rearing, weighed twelve pounds. One pregnant patient died from pneumonia, as mentioned elsewhere, without aborting; and the patient with fleshy mole had septicemia and perforation. Thus, of these seven cases, miscarriage occurred in two only. It is interesting to note in this

* Practitioner, March, 1891.

connection that the advocates⁵ of Brand's method have not hesitated to plunge menstruating, nursing and pregnant women, who had typhoid, into the cold bath, and without ill result it is said.⁶ Still, the pregnant state must be regarded as a dangerous complication, and Hölscher's analysis of 813 autopsies in women showed that two were pregnant, two had just aborted, 27 were in the puerperal period and four had puerperal fever.

Phlegmasia alba dolens. — Thrombosis of the iliac or femoral veins occurred in nineteen patients, of whom four died, two from consequent embolism of the pulmonary arteries and two from exhaustion.

Embolism, resulting in gangrene of an extremity, did not occur in this series of cases, but the following case was in my service in 1889:

Gangrene of the left Leg from Femoral Embolism; Recovery. — W. S., age twenty, entered the hospital September 21, 1889, on the sixth day of typhoid. Heart weak and irregular. Urine: acid; 1028; trace of albumen; a few hyaline and granular casts. On the 15th day of the typhoid the left leg became cold and very tender over the calf. On the 18th day it was cold, and discolored for ten inches above the malleoli. No pulsations had been felt below the middle third of left thigh. Mildly delirious. Skin of foot became dry and hard, like parchment. Circumference of left calf two inches more than right. October 9th (24th day) line of demarcation formed between the upper and middle third of leg. The affected part was kept clean by charcoal poultices. November 12th (58th day), all tissues gone at demarcation, except bone. Operation by Dr. Cheever. Pulse 156, and feeble at beginning. Sawed through, one and one-half inch above the bare bone, about four inches below knee-joint. Operation hurried because of patient's poor condition. He recovered well from ether. Wound healed gradually by granulation. Good stump. On November 29th (75th day), he was about the ward on crutches, improving in general condition very rapidly. Discharged.

Dr. Cheever had seen one or two similar cases, and thought delay less dangerous than amputation during the fever, as the event proved.

Dr. Drewitt⁷ reports the case of a girl, age twelve, in whom on the 26th day of the fever, absence of femoral pulsation was noted. Three weeks later, the fever having abated, amputation above the knee was performed. Recovery in three months.

Murchison, Liebermeister and Rousseau relate similar occurrences, and the latter author states that when the upper extremity is involved death is almost inevitable. Sphacelation of the cheek and ear may occur.

Doubtless this accident has been occasionally recorded in other hospitals, but this, I believe, is the first instance at the City Hospital in 4,250 cases of typhoid. Hölscher reports but four cases of iliac and femoral embolism in his 2,000 typhoid autopsies.

Neuritis. — Peripheral neuritis caused much pain in the legs with delayed recovery in 21 cases, 3%. The usual duration was from two to four weeks, but in one case, at least, there was much wasting of the calves of the legs and contracture at the knee-joints, which lasted several months before the patient could walk. Her mind also was very much weakened, but eventually she recovered.

⁵ Ziemssen and Immermann: *Kaltwasserbehandlung d. Typhus Abdominalis*, p. 20.

⁶ Bouveret: *Lyon Medical*, April 26, 1891.

⁷ The Lancet, November 8, 1890.

Insanity. — Two cases of post-typhoid insanity were transferred to other institutions, and the result is not known.

Otitis. — Twenty-two cases of purulent otitis, about 3%, are recorded, and there were probably more, as such cases usually passed into the hands of the aural surgeons, Drs. Green and Leland, whenever typhoid deafness occurred.

Peritonitis. — As stated above there were a few cases, mostly fatal, in which there may have been perforation or perhaps appendicitis, but the symptoms of this latter condition were marked in one case only and that recovered.

Relapses. — One hundred cases had relapses, 15%, and of these, three relapsed twice; two, three times. Eighteen were under fifteen years of age, none fatal. But one boy in his sixteenth year, who entered in a relapse in his fourth week, died on the 30th day. Three adults died in relapse, namely; one male and one female from perforations, and one female of twenty years from simple exhaustion; 6% of the deaths occurred in relapse; Hölscher gives 8%.

Prolonged Pyrexia. — In 35 cases the initial fever did not fall to the normal point for thirty days or more, and in nine cases it continued without defervescence for more than forty days.

(To be continued.)

THREE RECENT CASES OF ESOPHAGOTOMY.¹

BY GEORGE W. GAY, M.D.,
Surgeon to the Boston City Hospital.

The operation of esophagotomy is not common enough to render any apology necessary for reporting all of the cases which come to us. It has fallen to my lot to do the operation three times within the past year; twice for a foreign body, and once for stricture of the gullet, which could not be overcome by bougies alone. Two of the patients recovered, and one died. A brief report of these cases is submitted, in the hope that other equally interesting instances may be brought out in the discussion, which I trust may follow the reading of the paper.

On Friday, October 16, 1891, Lena —, aged three and one-half years, was brought to me by Dr. Francois, of Saugus Centre, with the following history: About eight months ago the child was given an ordinary cent, a coin three-quarters of an inch in diameter, to play with. Within a few moments the child was seized with a "choking fit" and the cent was missing, and was not again seen till the day of the operation. The choking symptoms soon subsided, and the child was apparently in her usual health for about six months when she began to reject a part of her food soon after swallowing it. This gradually increased until the time I first saw her, when she apparently rejected a very large portion, from the fact that she was emaciating and she was constantly tormented with hunger and thirst. All solids and much of the liquids were regurgitated easily in less than a minute after being swallowed.

The child was put under the influence of chloroform, rather than ether, to avoid the danger of spasm of the glottis, and also of the profuse secretion of mucus in trachea and bronchi. An esophageal bougie with

¹ Read before the Boston Society for Medical Improvement, January 25, 1892.

an ivory tip readily detected the foreign body at the lower end of the gullet.

An incision an inch and a half in length was then made upon the left side of the neck, midway between the median line and the anterior border of the sternomastoid, from the top of the thyroid cartilage downwards and inwards towards the sterno-clavicular articulation. The three muscles, sterno-hyoïd, and thyroïd and the omo-hyoïd were upon the inside, the sternomastoid with the carotid sheath and its contents were to the outer side of the incision. The thyroid gland was quite large, and was raised and drawn over to the median line. The deep fascie having been divided, the œsophagus was made prominent with a uterine sound introduced by the mouth. An opening was made into the gullet upon the sound, and the sides of the tube caught in a loop of silk. There was no hemorrhage, and not a ligature was required.

The foreign body was detected with the sound, apparently lodged upon the anterior wall of the lower end of the œsophagus, about two inches below the top of the sternum, and from three to four inches below the opening in the neck. The foreign body was apparently dislodged or tipped from the anterior to the posterior part of the tube, and after a little trouble it was seized with a pair of slightly curved forceps and withdrawn. It was an ordinary cent coin together with the skin of a grape. The coin seemed to just fill the œsophagus as it was being removed. It was blackened but not eroded.

The wound was left open, and a small drainage-tube inserted for twenty-four hours. The little one rallied well from the chloroform, and at once and persistently cried for drinks. For a few hours nothing was given by the mouth. Ice and cold water were then allowed in small quantities, and the next day she was allowed all the water and milk she wanted. A considerable portion escaped from the wound every time she drank, but a little probably slipped by the opening. At all events the child was much gratified by this feeding, and rested much better in consequence. The wound behaved kindly, did not slough at all, nor suppurate very freely. Enemata of peptonized milk and cream every two or three hours were given from the first.

Two days after the operation the temperature went up, the child was dumpish, and secreted very little urine. A poultice containing digitalis leaves was applied to the loins. Twenty-four hours later she was bright and lively, and convalescence progressed favorably.

Liquids escaped from the wound pretty freely for about five days, when suddenly the amount became very slight and ceased altogether about ten days after the operation. The child was up and about the ward in thirteen days, and went home October 31st. The wound was then merely a line of granulations. Ten days later, twenty-five days after the operation, she was brought to the hospital for inspection. The wound was soundly healed, the child was eating solid food, and was as well as ever.

CASE II. James C., aged twenty-eight years, was thrown from his cart on the 18th of last June. He fell upon his face, and a plate, upon which were four teeth, was literally "knocked down his throat." His attention was first drawn to the loss of his plate by pain at the epigastrum. He was able to swallow only liquids, and these with much effort and difficulty. He bore evidence of suffering on entering the hospital,

tal, four days after the accident, due in a measure to insufficient food, intemperate habits, and the usual irritation of a foreign body in that locality.

The plate was easily detected with an ivory-tipped bougie, and was situated thirteen inches from the upper incisors and about four inches below the top of the sternum. There was moderate swelling of the neck just above the sternum and clavicles.

The patient was etherized at once and the operation of œsophagotomy was done upon the left side in the usual manner. The œsophagus was brought up into the wound with a pair of curved esophageal forceps introduced from above. The opening of the gullet was thus rendered much easier than the method of cutting upon a stomach tube or bougie. There was no hemorrhage of consequence.

The plate was detected about seven or eight inches from the wound, seized with a pair of long forceps, and after a little trouble was removed. The dimensions were one and a half by one and three-quarters inches.

The wound was closed with silk sutures. This treatment had succeeded admirably in a previous case, but this patient was not in a favorable condition for it. The open method is undoubtedly the best for these cases, as free drainage is necessary in most instances.

The patient rallied from the operation very imperfectly, in spite of frequent injections of food and stimulants. Delirium soon came on and a typhoid condition became established. On the third day after the operation the wound was reopened and the tissues found to be infiltrated and on the eve of sloughing. There was no pus. The septic state present at time of operation was profound. Large quantities of food and stimulants were given by a stomach-tube. The symptoms steadily progressed to the end, which occurred five days after the operation. Death was due to septicemia and exhaustion.

CASE III. Mr. K., aged forty-eight, began to notice difficulty in swallowing about four months before coming under observation at the City Hospital. The dysphagia gradually increased until he could not swallow even liquids. Emaciation and debility were pronounced. Repeated efforts were made by Dr. Mixter and myself to pass a bougie through the stricture into the stomach, without avail. Bougies were arrested eight inches from the teeth. Patient struggled and became cyanosed at every attempt at entering the stricture. The pouch above the constriction held about two ounces. Some relief followed our efforts at dilation, but it was only temporary.

On May 17, 1891, the patient was reduced to such extremes, that more radical measures for his relief were imperative. The question to be decided was, whether to approach the stricture from the stomach, or by the neck. I chose the latter operation because less damage would thereby be done to healthy and important strictures, and because the after-treatment and course of the affection would in all probability be more satisfactory.

The œsophagus was opened upon the left side in the usual manner, and the finger readily entered the pouch above the stricture. The hard, lobulated mass about the size of a small orange was readily felt, but the opening to the lower portion of the gullet was only found after careful exploration with a long probe. It was located, not at the bottom of the pouch, but upon the anterior wall about an inch above the lowest portion. The opening to the lower part of

the tube having once been located it was not a difficult matter to pass a bougie down from the mouth and with the finger in the pouch to guide the point into the lower part of the canal, and so on into the stomach. This having been accomplished, Dr. Mixter very readily passed a No. 19 Symond's tube into the oesophagus, and placed it in its proper position.

The patient having now rallied from the chloroform, drank a glass of milk very easily, a very little escaping from the wound. The wound was left open and the patient given all the milk, and brandy and water he wanted. A considerable part of the liquids drank escaped from the wound for about a week, but he gained in strength and spirits, and was up, dressed and about the ward in eight days. He was out-of-doors in a little over two weeks, and the wound in the neck was healed in three weeks.

The tube was changed in two weeks with considerable benefit to the swallowing, as the old one had become foul. Nine days later another tube was put in, which was allowed to remain till the patient's death, five weeks later, for the reason that it was impossible to remove it by any reasonable efforts. A bougie was passed into the stomach every two or three days towards the last for the purpose of keeping the tube clear.

This patient improved so much that he left the hospital a month after operation, and remained at home with his family during the last weeks of his life. Two days before death he returned to the hospital, emaciated, weak to the last degree, and suffering horribly from dyspnoea upon the least exertion. He was given a few whiffs of chloroform, and tracheotomy was quickly performed with some relief. On opening the trachea about two ounces of the most fetid pus escaped, mixed with a little blood. He had raised blood at times in small quantities ever since the operation first or soon after. He died quietly from exhaustion July 15th.

This man lived two months after the operation, and it is fair to say that half of that time, and most of his comfort, were due to the treatment. The relief of his hunger, thirst, weakness, nervousness and general irritability was very marked and satisfactory. The pangs of starvation were thus greatly relieved until the disease had made such inroads upon his vitality that he was largely oblivious to his surroundings. The inevitable result was delayed, and his last days were made very much more endurable by the above procedures, which is all that can be reasonably expected of any treatment for this affection at the present day.

Intubation of the oesophagus for stenosis bids fair to rival in usefulness its twin invention of Dr. O'Dwyer for the relief of laryngeal obstruction. The tolerance of the tube is as surprising and as satisfactory in the one case, as in the other. The facility with which our patient drank through the tube was very gratifying to all concerned. After a day or two very little pain or soreness was complained of, except when the tube was removed. This procedure was always attended by violent spasms of the glottis, difficult breathing and cyanosis. Fortunately the tube may be allowed to remain in place a fortnight under ordinary circumstances, although it gets pretty foul in that time. It would be better to remove the tube every week, if it can be done without too much disturbance.

In closing, the writer wishes to make his acknowl-

edgments to Dr. Mixter for his valuable assistance in this case, as well as for his most ingenious and useful instrument.

THE MANAGEMENT OF COMPOUND DISLOCATIONS OF THE ANKLE-JOINT.¹

BY CHARLES L. SCUDDEER, M.D.
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By dislocation of the ankle I understand a displacement of the upper articulating surface of the astragalus from the lower articulating surface of the tibia, so as to carry the whole foot either forward or backward of the median lateral plane, or to the inner or to the outer side of the antero-posterior plane of the leg; that is, the position of the foot determines the dislocation.

By a compound dislocation of the ankle I understand a dislocation in which at least some one of the ankle-joint surfaces is exposed to the air through a wound.

Hippocrates, in his article on the treatment of compound dislocations at the ankle-joint, as translated by Francis Adams, says:

"In case of complete dislocation at the ankle-joint, complicated with an external wound, whether the displacement be inward or outward, you are not to reduce the parts, but let any other physician reduce them if he chose. For this you should know for certain that the patient will die if the parts are allowed to remain reduced, and that he will not survive more than a few days, for few of them pass the seventh day, being cut off by convulsions, and sometimes the leg and foot are seized with gangrene. But if not reduced nor any attempts at first made to reduce them, most of such cases recover."

"The leg and foot are to be arranged as the patient wishes, only they must not be put in a dependent position, nor moved about. On no account is a bandage or compress to be applied. Certain of the dressings used in recent wounds are suitable in such cases, but those into which rosin enters as an ingredient do not agree with them; for the cleansing of the sore is a slow process, and there is a copious discharge for a long time. It ought to be well understood that the patient must necessarily be much maimed and deformed; for the foot is retracted outward, and the bones that are displaced protrude outward. But the wound heals by thin and feeble cicatrices, provided the patient keep quiet for a length of time; but otherwise there is danger that a small ulcer may remain incurable."

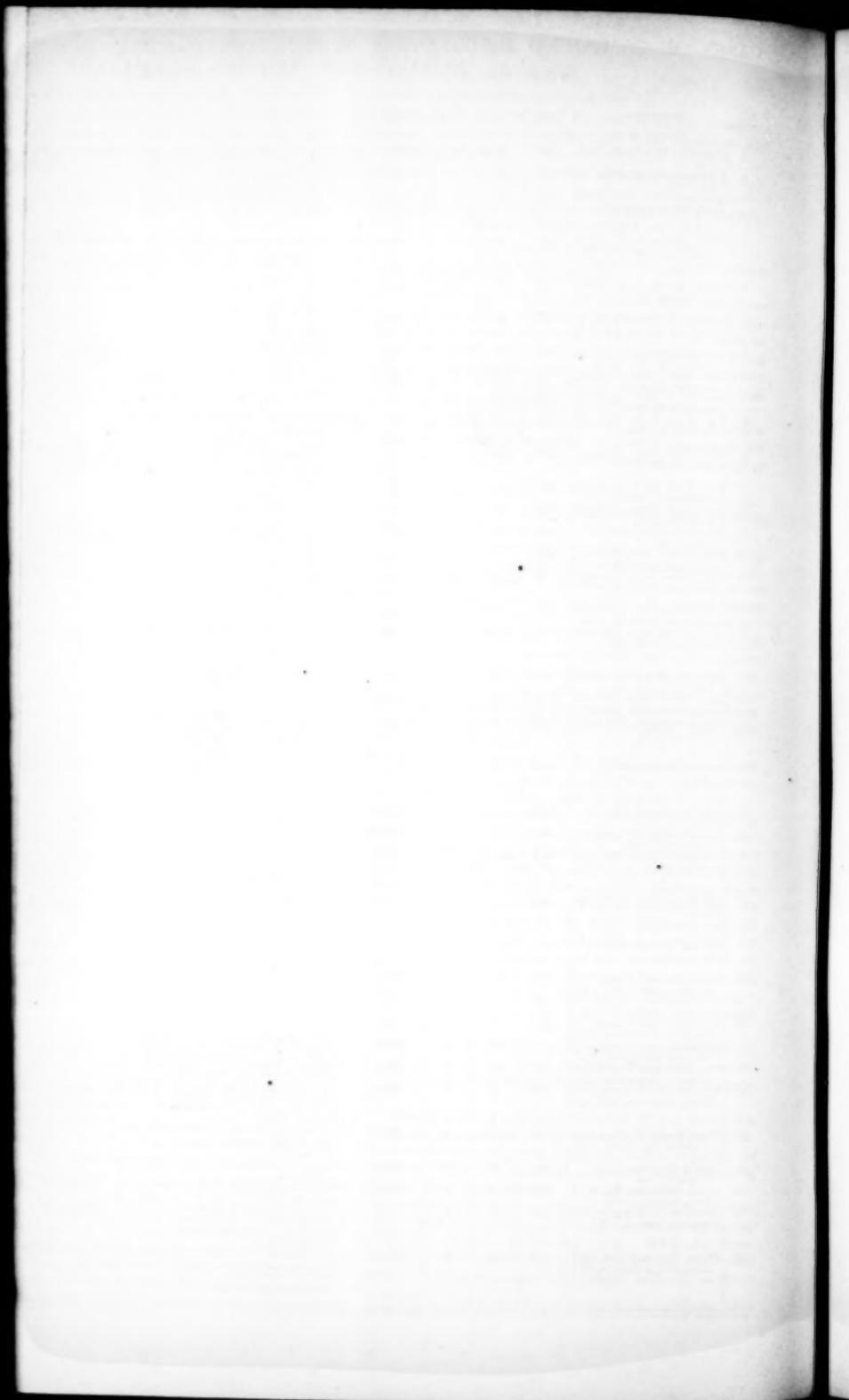
"And yet in the case we are treating of, those who are thus treated are saved, whereas when the parts are reduced and allowed to remain in place, the patients die."

Hippocrates is very decided in his advice as to the treatment of compound dislocations of the ankle-joint. He saw the necessity for drainage, and recognized its presence when the dislocation is left unreduced, and its absence when reduced. The amputation of a limb was looked upon with horror until the times of Ambrose Paré, the opinion of Hippocrates controlling the action of surgeons for a long time. With the introduction of the ligature, amputation became more common. Desault advocated the reduction of dislocations

¹ Read before the Boston Society for Medical Improvement, January 5, 1892.

CASES OF COMPOUND DISLOCATION OF THE ANKLE-JOINT, IN WHICH THE END-RESULT IS KNOWN,
REPORTED IN MEDICAL LITERATURE SINCE 1877.

No.	Reference.	Year.	Age.	Sex.	Accident.	Injury.	Operation.	Result.	Usefulness.	Remarks.
1	Louisville Med News, 1879, p. 54.	1879	26	M.	Fall.	Right foot turned inward. No fracture.	Reduced without cutting.	In 2 mos. discharged well.	Slight limp. Walks easily.	
2	American Homeopath., May, 1881.	1881	24	M.	Crushed.	Fracture of fibula. Tibia through the wound.	Reduced.	Well.	Motion.	
3	Liverpool Med. Chir. Jour., and, 1884, IV, 439.	1884	44	M.	Fall.	Foot turned outward. Right astragulus through skin.	Astragulus removed. Drained.	Healed in 2 months.	Slight limp. Slight motion at ankle.	
4	Amer. Pract. and News, Louisville, 1887, III, 103, 109.	1887	50	F.	Fall.	Foot turned outward. Fibula protruded 2 in. Fracture of tibia above malleolus.	Int. mal. and articular surfaces of tibia and astragulus removed. Drained.	Healed in 2 months.	Walks without a cane Fair amount of motion at ankle.	
5	Amer. Pract. and News, Louisville, 1887, III, 103, 109.	1887	17	M.	Fall.	Left ankle. Tibia fract. at lower end. External malleolus fractured above malleolus.	Joint surfaces was removed.	Well. Crutches 6 months.	Useful foot.	Posterior tibial artery torn. Abscess on outer ankle. Increased motion at tarsometatarsal joint.
6	Buffalo Med. and Surg. Journal, 1881-82, xxi, 515.	1881	38	M.	Fall.	Foot turned outward. Tibia 2 in. protruded. External malleolus fractured.	Reduced.	Well.	Five months afterward good motion and use of limb.	Operation 3 wks. after injury. Abscess opened up the leg.
7	Philadelphia Med. Times, August 12, 1881, p. 118.	1881	15	M.	Fall.	Fracture of malleoli.	Excision. Drained.	Well.	No limp with lift. Fair motion.	Shortening ½ in.
8	New York Med. Journal, January 25, 1890.	1890	Adult.	M.	Crushed.	Tibia and fibula both forward.	Reduced.	Well.	Useful.	Entire front of foot laid open. Incisions to relieve tension.
9	New York Med. Journal, January 25, 1890.	1890	28	M.	...	Both bones outward.	Reduced.	Well.	Useful. No limp end of three months.	
10	New York Med. Journal, January 25, 1890.	1890	21	M.	...	Compound fract. of astragulus. Pott's fract. Fract. fibula. Junc. upper and mid. thirds.	Reduced.	Well.	Useful.	Drained incisions to relieve tension.
11	New York Med. Journal, January 25, 1890.	1890	33	M.	...	Compound fract. of astragulus. Tibia fibula articulating surface.	Reduced. Loose piece of astrag. removed.	Well.	Useful. Slight lameness.	
12	New York Med. Journal, January 25, 1890.	1890	46	M.	...	Compound fract. of astragulus. Post-tibial ligated.	Reduced.	Well.	Useful.	Iodoform poisoning. Fracture astrag. necrosed, removed. Dead bone. Suppuration.
13	New York Med. Journal, 1888, n. s., xlii, 92.	1888	...	...	...	Both bones and protruding.	Reduced.	Well.	Useful four years after accident.	
14	London Lancet, June 2, 1883, p. 948.	1883	37	M.	Fall.	Compound subastragulus dislocation. Fract. head astrag. Left ankle. Both bones project through skin. Foot twisted.	Reduction by removal of head of bone.	Well.	Useful. Some movement at ankle.	Incisions made later to relieve tension.
15	Med. Press and Circular, 1888, n. s., xvi, 83.	1888	28	M.	Fall.	Right ankle. Tibia protruded.	Reduced.	Not healed. Doing well.		
16	Med. Press and Circular, 1888, n. s., xvi, 83.	1888	48	M.	Crushed.	Right ankle. Tibia protruded. Wound. Fibula comminuted.	Reduced. Drained.	Not healed. Doing well.		
17	Med. Press and Circular, 1890, n. s., xlii, 35.	1890	Adult.	M.	Crushed.	Both bones on dorsum of foot.	Reduced.	Well.	Useful foot and ankle one year later.	Free incisions made to relieve tension.
18	Med. Press and Circular, 1890, n. s., xlii, 35.	1890	Adult.	M.	Crushed.	Right foot. Tibia 3 in. through wound. Fibula comminuted. Foot exerted. Excision of tibia and fibula 6 mos. later.	Reduced. Drained.	Well.	Useful.	Incisions to relieve tension.
19	Med. Press and Circular, 1890, n. s., xlii, 35.	1890	28	M.	Fall.	Tibia and fibula outward.	Reduced.	Well in 3 mos.	Useful. No limp.	
20	New York Med. Record, August 19, 1889, p. 146.	1889	22	M.	Crushed.	Left foot.	Astragulus removed.	Well in 3½ mos.	Useful. Slight limp in one year.	
21	Medical Record, 1885, xxvii, 515.	1885	45	M.	Wrench.	Compound dislocation of tibia with fracture. Fibula 2 in. above ankle joint. Internal malleolus protruding.	Reduced. Bits of bone removed.	Well.	Walked after 4 mos. with cane.	Motion after 7 years ½ as great as bad side.
22	London Lancet, 1878, II, 439.	1878	34	M.	Fall.	Left foot exerted. Wound from ant. tibial tendon to inner malleolus, which with the astragulus protruded.	Reduced by removal of astragulus.	Well in 4 mos.	Useful. Some motion present.	Suppurated freely. Erysipelas. Abscesses. Bed sores.
23	London Lancet, 1882, II, 411.	1882	Adult.	M.	Crushed.	Left foot exerted. Astragulus protruded.	Reduced by removal of astragulus. Drained.	Well.	Slight limp. Useful extension and flexion.	
24	Glasgow Med. Journal, December, 1886.	1886	18	M.	Crushed.	Foot backward. Wounds in front.	Reduced.	Well.	At work 3½ mos. No limp in 4 mos.	
25	Minnesota State Med. Society, 1876.	1876	Adult.	M.	Fall.	Foot exerted. Tibia protruded.	Reduced.	Well.		
26	The Polyclinic, December, 1886.	1886	...	...	...	Foot exerted. Tibia 1 in. thru' wound. Fibula 1 in. from joint. Int. lateral ligament torn, malleolus torn off.	Reduced.	Well.	Died of paralysis.	
27	Indiana Med. Journal, May, 1886.	1886	Adult.	M.	...	Foot exerted. Fibula and internal malleolus fract in two places. Fibula protruding.	Reduced.	Well.	Useful.	Posterior tibial tied.
28	Principles and Practice of Surgery, Ashhurst, 212.	1878	32	M.	Fall.	Compound dislocation of the ankle.	Removed part of bone.	Well.	Usefulness perfect.	
29	Principles and Practice of Surgery, Ashurst, 212.	1882	30	F.	Fall.	Compound dislocation of the ankle.	Reduced.	Well.	No limp.	
30	Principles and Practice of Surgery, Ashurst, 212.	1883	60	F.	Fall.	Protrusion of bones.	Reduced.	Well.	Slight lameness.	
31	Principles and Practice of Surgery, Ashurst, 212.	...	64	M.	Blow.	Compound dislocation of the ankle.	Reduced.	Died.		Sepsis.
32	Principles and Practice of Surgery, Ashurst, 212.	...	50	M.	Fall.	Compound dislocation of ankle. Much dislocating tibia. Right ankle. Comp. dislocation. Foot exerted. Fibula broken 2 in. up shaft. Tibia broken in several pieces.	Excision.	Well.	Useful.	
33	Med. Press Western New York, January, 1888, p. 9.	1888	45	F.	Fall.	Foot exerted. Fibula protruding.	Excision.	Well.	Useful.	Lateral ankle support.
34	Trans. South Carolina Med. Association, April, 1888.	1888	Adult.	M.	Fall.	Foot exerted. Fibula protruding. Fibula fractured 2 in. from malleolus.	Reduced.	Well.	Useful.	
35	Boston Med. and Surg. Journal, 1881.	1881	28	M.	Fall.	Compound dislocation of right astragulus.	Reduced.	Well.	Uses cane in walking. No motion at joint.	Abscesses. Astrag. necrosed.
36	Trans. Oregon State Med. Society, 1877.	1877	27	M.	Crushed.	Compound dislocation of astragulus.	Reduced. Astragulus removed.	Amputation.		Septic. Abscesses.
37	Trans. Illinois State Med. Society, 1880, p. 122.	1880	51	F.	Fall.	Compound dislocation of ankle. Tibia protruded. Fibula fracture 2 in. from malleolus. Foot exerted.	Reduced. Excised internal malleolus.	Well.	Useful. Motion at the ankle.	Carious bone removed subsequently.
38	Trans. Intercolonial Med. Congress, Australia, 1889.	1889	33	M.	Fall.	Pott's fracture of right leg. Left leg compound dislocation of astragulus, with a fracture of astragulus.	Reduced. Excision of the astragulus.	Well.	Useful.	



of the ankle, and then amputation ceased to be the common practice. Sir Astley Cooper advised resection of the joint in almost all cases. Since his day surgical opinion has fluctuated, no definite course being laid down.

There are to-day for consideration three methods of treatment: (1) Reduction; (2) partial or complete separation with reduction; (3) amputation, primary or secondary.

The comparatively modern authorities in surgical literature in America—Ashurst, Hamilton, Gross and Agnew—advise strongly that, as a rule, amputation be done. The English authorities, on the other hand,—Holmes, Bryant, Holthouse and Erichson—are very conservative, advising an attempt to save the limb by excision, reserving the badly comminuted cases for amputation. These views merely repeat what the profession has for a long time maintained. No very definite rules of procedure have been laid down by any one. This may be impossible and impracticable; but it seems that to-day this may safely be done.

There are two things to be considered in deciding what to do with any case of this injury: (1) The extent of the laceration of the soft parts; (2) the amount of injury to the bones.

(1) If the laceration is so great that the foot is useless, amputation is indicated; and amputation is indicated in only two other instances—old age and sepsis.

(2) If this laceration is not great, and the dislocation can be reduced, it should be reduced without excision, proper drainage being provided both anteriorly and posteriorly to the joint.

(3) If the laceration is not great and reduction is impossible, then an excision should be done, either partial or complete.

(4) If there is great injury to bone whether the dislocation can or cannot be reduced, a partial or complete excision should be done.

Aseptic surgery regards all fresh accident wounds, particularly those connected with the joints, as comparatively safe so far as immediate danger to life is concerned, and if expectant treatment, as indicated above, is instituted in these cases, the chances for a useful foot and ankle-joint are very great. The best results from expectant methods of treatment of compound dislocations of this joint are due to aseptic methods in every instance. All compound dislocations of the ankle-joint, however small the wound in the soft parts, should be thoroughly cleansed. In order to insure an aseptic wound, the small opening should be enlarged so that the joint may be thoroughly examined and cleansed in every part.

I have carefully examined the records of all cases of compound dislocation of the ankle reported in the medical literature since 1878. I found a total of thirty-eight cases, in which the end-result is known. Twenty-two were reduced without operation. In eight the astragalus was removed. In six a partial excision was done. In two a complete excision was done. The end-result in these cases were, as to usefulness of the foot, excellent. As to the mortality, one case died of sepsis, aged 64, in 1883; one case in 1877, came to amputation. The age of the oldest was sixty-four years; of the youngest, fifteen years. Only those cases were taken for study in which the end-results were known.

Through the kindness of Dr. H. H. A. Beach, under whose care the case came at the Massachusetts General Hospital, I am allowed to make the following

report of a case of forward compound dislocation of the ankle-joint which under conservative and non-operative treatment recovered with a useful though stiff ankle-joint.

E. D., age ten years.

April 24, 1888. Caught foot between the tracks of a railroad turntable; was held fast and thrown violently to the ground. Shortly afterward an antiseptic dressing and side splints were applied to the foot. He was brought to the accident-room five hours after the injury. On examination, a compound dislocation of the right ankle backward, with fracture of the internal malleolus was found. There was an extensive laceration of skin across the dorsum of foot from one malleolus to the other forming a gaping wound two inches wide, exposing the extensor tendons. The anterior tibial tendon was torn, and the dorsalis pedis artery ruptured. The tip of the internal malleolus was found broken and the bones of the leg displaced backward—the heel being shortened and the upper articular surface of the astragalus lying anteriorly.

May 4th. A small abscess was opened at the tip of one malleolus.

July. Entirely healed. Extensive cicatrix across dorsum of foot. Complete ankylosis at ankle-joint.

August 1st. Up and about on crutches.

March, 1891, two years and nine months after the wound healed, the boy uses the injured foot and leg as well as the other. The tibiae are of the same length. The right calf measures 10 inches. The left calf measures 11½ inches. He walks with a slight limp, which is not noticeable to many. There is a slight tendency to walk on the outer edge of the foot. After walking all day, particularly in damp weather, there is some pain and a little stiffness about the foot.

In conclusion, extreme conservatism should characterize the treatment of recent compound dislocations of the ankle-joint. Such treatment as is emphasized above should, in the large majority of cases, result in a useful ankle-joint and foot.

Clinical Department.

TWO CASES OF COMPOUND FRACTURE AND DISLOCATION AT THE ANKLE-JOINT.¹

BY ANTHONY PORT, M.D.,
Visiting Surgeon, Boston City Hospital.

THESE two cases were shown to the Society for Medical Improvement, to illustrate the fact that very serious compound dislocations may recover under modern wound treatment.

In the first case the accident occurred on August 20, 1890. The patient, who was a teamster, was thrown from his wagon on to the pavement. When brought to the hospital, there was a wound below the external malleolus of the left tibia. The astragalus was broken, and one-half of it protruded through this wound, and the foot was strongly inverted. Before any surgical procedure was begun, all the parts about the wound were carefully cleansed and washed with a solution of corrosive sublimate of a strength of 1 to 3,000. The wound was then enlarged. It was absolutely impossible to replace the misplaced portion of the astragalus, and it was removed. The foot was restored to its normal position, and a dressing of gauze soaked in a 1

¹ Shown before the Boston Society for Medical Improvement, January 25, 1892.

to 2,000 solution of corrosive sublimate applied. A plaster-of-Paris bandage was then applied over all, exactly as might be done for a simple fracture.

On the evening of the 21st the temperature was 100°; on the evening of the 22d 101°; on the morning of the 23d it fell to 99°. On the 25th it was between 100° and 101°; it then fell to 99°, where it remained for a few days, and for the remainder of the time was practically normal. The first dressing was done on September 2d, when the wound was healed, except a small granulating area about half an inch square. The circular plaster was replaced and retained until September 22d, when the wound was entirely healed and some motion in all directions was found.

This patient was kept long in bed, as he had lost his left arm many years before and was unable to use crutches. He was thirty-two years old at the time of the accident, and was the driver of a beer-wagon. He had lost his arm some years previous from a compound fracture of the hand, which to his eyes was much more serious than the accident to his foot and his surprise and delight at retaining his leg was very great. He now walks without any support. When shown to the Society, he walked with both feet bare on the level floor with but a slight limp, but in going up or down stairs there is evident disability.

The second case was Mr. A. L. P., aged forty at the time of the accident, which occurred on April 23, 1888. When brought to the City Hospital on that date the articular end of the tibia projected more than two inches through a wound over the outer malleolus. The foot was turned inwards and upwards so that the exposed bone lay over the heel. The periosteum was stripped up from the tibia, and both malleoli broken off. The accident resulted from a fall of about six feet from a ladder that broke while he was upon it. He came down feet foremost on an inclined plank driveway.

Everything was made clean; the incision was enlarged upwards; and fragments, of which there were many small ones, were removed with forceps, fingers and irrigation. As the removal of the fragments seemed incomplete, an incision was made over the inner malleolus, and the fingers passed freely through the joint. The bones were then replaced, the periosteum adjusted and secured in place with a stitch or two of cat-gut, the skin carefully replaced and stitched with silk. No drainage-tubes were used, but a stitch or two omitted to allow easy exit for any discharge. Irrigation with corrosive-sublimate solution was freely done during the operation, and corrosive gauze dressing was applied. The whole was carefully enveloped in a plaster-of-Paris bandage.

The first dressing was done on May 7th, when there was slight external sloughing at the site of the original wound. There was afterwards slight suppuration at that point, but it was confined to the external portions of the original wound.

The patient was sent home on June 3d, and made a good recovery. When shown to the Society, there was motion at the joint in all directions, and the patient declared that the foot was as good as before the accident.

The principle point in the treatment of these cases — which were not unique, though extremely favorable examples of what may be done with compound dislocations at the present day — was the disinfection of the wound, but the immobility, as enforced by the plaster bandage, was of almost equal importance.

PEROXIDE OF HYDROGEN AS A DEODORIZER, IN CANCER OF THE UTERUS.

BY GEORGE W. KAAN, M.D.
Surgeon to Out-Patients, Free Hospital for Women, Boston.

THE value of peroxide of hydrogen in washing out sinuses and abscess cavities, has led me to use it recently as a vaginal injection in cancer of the uterus; and with gratifying results.

My cases have been few; but in each the distinctive cancerous odor was noticeable about the patient before the use of the peroxide of hydrogen, and absent afterwards. In one out-patient case the fetor was so pronounced, that the air of the room seemed saturated with it, the moment she entered. When I last saw her in making an examination no odor was perceptible a foot from the vulva, and only slightly so close to it. In this case she had used the injection the night before, and a cancerous mass as large as a man's fist, hung in the vagina, within two inches of the vulva. This case had had palliative treatment in the hospital, by curetting, Paquelin's cautery, and chloride of zinc applications. When she first came to me the disease had extended over the whole anterior vaginal wall; since then the peroxide of hydrogen has been used, and the anterior wall is clear. It seems to me that the injections have had some curative action.

Further observation, of course, is necessary; but bearing in mind what Sir Spencer Wells says of cancer and cancerous disease, that everything in relation to it is so important that nothing should be thought a trifle, and my material being limited, I venture to state the facts as they appear to me in this case.

Regardless, however, of any value it may have as a curative agent, its use as a deodorizer, and this without substituting another odor for the cancerous one, makes it of inestimable worth in adding to the comfort of the patient, where palliative treatment alone is all that remains.

The method of using has been to take about an ounce of the peroxide of hydrogen and an equal quantity of water, warmed by being placed in a pan of hot water, and injected through a soft rubber catheter, so that the injection shall be sure to reach the back part of the vagina. Such an injection once or twice a day has been sufficient.

Medical Progress.

RECENT PROGRESS IN PUBLIC HYGIENE.

BY S. W. ABBOTT, M.D.

(Concluded from No. 13, page 313.)

CHEMICAL AND BACTERIOLOGICAL INVESTIGATION OF THE SYSTEM OF SEWAGE TREATMENT AT POTSDAM.⁵

It is pointed out in the introduction that the object to be attained in the purification of sewage-water is the destruction of all the infectious matter contained therein. It is also necessary to effect such changes that the liquid after treatment may no longer be liable to putrefaction. The success of any process in accomplishing these results must be tested by chemical and bacteriological analyses. The chemical investigations should in the main be relied upon for the de-

⁵ B. Proskauer and Dr. Nocht: Zeitschrift für Hygiene, vol. x, 1891, p. 311.

termination, quantitatively, of the amount of putrescible organic matters present in the sewage. The best methods of conducting the analyses by the computation of (1) the loss on combustion; (2) the amount of permanganate potash needed to oxidize the organic matters; and (3) the total amount of nitrogen present, are described. The great differences in the results obtained in the examination and treatment of fresh sewage, and of sewage that is already partially putrid, are discussed. In addition to the above-mentioned facts it was deemed advisable, in the case of the Potsdam inquiry, to ascertain the total amount of lime and chlorine present in each sample before and after treatment. By reference to a diagram the arrangement of the works at Potsdam is described: They consist of a siphon-well constructed to hold 8.5 cubic metres of raw sewage, a deep well to hold 28.5 cubic metres, clarifying chamber, conical in form, with the clarifying cylinder dipping into it, the latter being 2.75 metres in diameter, inclined at an angle of sixty degrees, and rising to a height of 6.5 metres above the top of the conical vessel into which it dips. The mode of working the apparatus by means of a partial vacuum created in the upper part of the cylinder is explained. The authors state that the preparation employed for the treatment of the sewage is a secret in the hands of the firm, but the composition of the reagents was disclosed to them. The only active disinfectant is quicklime, which in the form of milk of lime, constitutes about one-fifth of the mixture. The quantity of the precipitants used is not varied in accordance with the strength of the sewage. It was found necessary to take samples of the sewage under treatment in seven different places. The results are set forth in tables. It is stated that the sewage was of a highly concentrated character, more in the nature of the contents of a cesspool than like ordinary town sewage. In order to give an idea of its composition, the sewage is compared with that of Dortmund, Essen, Berlin, and of the Schwartzkopff works, the last-named being practically pail-stuff, yielding a residue on evaporation of 2,408 milligrammes per litre. The Potsdam sewage contained in one trial a residue of 2,271.5 milligrammes per litre, and showed a loss on combustion of 819 milligrammes per litre.

The working of the process is contrasted with the corresponding figures obtained on the treatment of the sewage of Dortmund and Essen in a further table, from which it follows that at Potsdam the residue on evaporation in the effluent was reduced from 2,271.5 milligrammes to 1,844.5 milligrammes, the loss on combustion from 819 milligrammes to 443.5 milligrammes, the oxygen required as tested by permanganate of potash from 975 milligrammes to 546.5 milligrammes, and the total nitrogen from 262.3 milligrammes per litre to 169 milligrammes; these reductions being respectively equivalent to 19, 46, 44, and 36%. The amount of ammonia was increased by the process, owing no doubt to the decomposing action of the lime; and still better results were obtained towards the close of the treatment. The clarification, the removal of the matters in suspension, is stated to have been completely successful; not so, however, the results, as respects the matters in solution, owing in all probability to the extremely concentrated nature of the liquid. The chief remaining point to be ascertained was, whether the effluent, after its discharge

into the river Havel, was diluted to such an extent as to be prevented from subsequent putrefaction, and whether it was likely to have any deleterious effect upon the river-water.

Analyses are given to show the influence of the sewage admixture upon the composition of the river-water, and the authors affirm that it may be assumed from these that the dilution which takes place is such as to remove all danger of injury to the river.

The bacteriological examinations of the results of the process are shown in a series of tables, and from these it would seem that the amount of precipitants employed is insufficient to destroy all germs in the sludge and in the effluent, and that it would be necessary to make use of five times the present amount of quicklime to effectually sterilize the effluent.

ON THE SUCCESS ATTAINED BY VARIOUS SYSTEMS OF CLARIFYING SEWAGE-WATER AT FRANKFORT-ON-THE-MAIN.⁶

The experiments here recorded have been carried out during the past three years, at the Frankfort works, under the supervision of a Commission consisting of Dr. Spies, Mr. Lindley, Dr. Libbertz and the author. Certain of the results obtained have been already published, and an account of the works is there given. In all, eight series of experiments have been conducted, with five different systems of clarification. The various processes investigated were as follows:

- (a) Precipitation with sulphate of alumina and lime. Series I to III.
- (b) Precipitation with lime alone. Series IV.
- (c) Simple deposition, without chemicals. Series V.
- (d) Precipitation with sulphate of iron and lime. Series VI and VII.
- (e) Precipitation with phosphoric acid and lime. Series VIII.

The volume of sewage dealt with was about 30,000 cubic metres (6,600,000 gallons) per diem, and upwards of one thousand complete and comprehensive analyses were carried out. The results of the different series of experiments are set forth in eight tables. A second set of tables gives comparative analyses of the sewage-water and the effluent. In its mean composition the Frankfort sewage, though considerable fluctuations were observed, does not differ materially from that of other towns, London, Paris, Dantzig, Berlin and Breslau, with which it is contrasted in a special table. By means of a set of graphic diagrams are shown the results of the various purification processes, as evidenced by the character of the effluent as compared with the raw sewage, and the author sums up the general effect of the different modes of treatment. In all cases the suspended matters were far more efficiently dealt with than those in solution, and the appearance of the sewage-water, as tested by the eye alone, was greatly improved.

Passing on to the comparative value of each of the various processes as tested by the elimination of injurious constituents, numerous tables are given to show the amounts of suspended and dissolved impurities removed by each different system, and the effect produced by the various precipitants is discussed in detail.

In dealing with the amount of organic matter pres-

⁶ Dr. B. Lepius: *Vierteljahrsschrift für öff. Gesundheitspflege*, 1891, p. 230.

ent, special consideration is given to the phosphoric acid treatment, and a graphic diagram is appended to show the proportion of the phosphates removed at each different stage of the process, and carried off in the effluent.

From this it appears that though all the added phosphoric acid is expended in enriching the sludge, the amount of phosphoric acid present in the deposit from untreated sewage is nearly twice as great as is that in the sludge from the phosphate process. The figures in milligrammes per litre are as follows :

PHOSPHORIC ACID ORIGINALLY PRESENT.	PHOSPHORIC ACID AFTER TREATMENT.
(1) In raw sewage	67.4
(2) Added to secure precipitate	17.6
Total,	85.0
(1) In deposit in sand chamber	29.4
(2) In sludge	38.2
(3) In effluent	38.2
Total,	85.0

Hence, instead of securing a sludge valuable for agriculture, more than twice the quantity of the phosphoric acid employed for the precipitation is carried away in the effluent, namely, 38.2 milligrammes per litre, of which about half is in suspension, and half in solution. The author points out that from this aspect it would be better not to treat the sewage with phosphate of lime at all, but to clarify it by simple deposition, and then to add the phosphate to the sludge. In conclusion, it is stated that the experiments have demonstrated that the effect of chemical precipitation is not so greatly superior to the purification obtained by simple deposition in tanks, as to warrant the adoption of any of the above processes in preference to simple mechanical treatment. This, of course, does not hold good for sewage treatment generally, but it applies only to the conditions prevalent in the present works. It is proved, however, that in every case where tanks approaching the dimensions of those at Frankfort are available, more especially where the length of the tanks is equally great, it is possible to obtain, by purely mechanical means, results comparing favorably with the clarification attained elsewhere in tanks of smaller size only by means of chemical treatment, and therefore at a greater cost.

THE SCHWARZKOPFF SYSTEM OF SEWAGE-TREATMENT (BERLIN).⁷

The Berlin University Hygienic Institute having been requested to report on the Schwarzkopff process, to decide upon the extent to which the offensive constituents of fecal matters were eliminated by this system of treatment, the necessary bacteriological researches were entrusted to Dr. Plagge and Dr. Petri, under the superintendence of Dr. Noch; and the author was instructed to undertake the chemical investigations, and to report generally upon the experiments. The factory where the system is in use contained a set of water-closets, dry-closets and urinals, resorted to daily by about seven hundred work-people. The cesspit receives also the liquids from the urinals, which are flushed with water. The fecal matters are raised from the cesspit into a mixing tank close alongside, where they are pulped by mechanical means and mixed with chemicals which consist of : (1) milk of lime; (2) solution of sulphate of magnesia; (3) solution of crude superphosphate; (4) solution of chloride of magnesium. These substances are added separately, in tanks provided with stirring apparatus, and they are

apportioned by small metal cups attached to an endless band. After this treatment the mixture passes along an open channel into one or the other of a set of three depositing tanks, where the solids subside, and a tolerably clear liquid is decanted off and passed through a peat-filter. The sludge is also run on to a layer of peat to drain, and when all the liquid has been strained away it is converted into poudrette manure in a special apparatus at a temperature of 70° centigrade. The clear liquid from the filters is allowed to flow into the sewers. Eleven different samples were examined in order to complete the inquiry; namely, the fecal matters from each description of closet, the mixture of excreta in the tank before and after the addition of the chemicals, the supernatant fluid and the sludge from the depositing tanks, the peat and filtered liquid, the sludge and the liquid draining from the same, and the poudrette.

The author describes the mode of taking the samples, and the way in which the chemical analyses were conducted. The results are set forth in a tabulated form. The nature of the action of the precipitants, and the relative quantities of each substance employed are also inquired into. Three different sets of experiments were carried out, for reasons which are explained. A corresponding series of bacteriological investigations of the products obtained at each different stage of the process was conducted in the institute, and the number of germs present, which range from 150,000,000 per cubic centimetre in the fecal matters in the dry-closet to 20,000 in the unused peat, are shown in the table. Each of the three sets of observations are described in detail, together with certain side issues, which arose out of the inquiry; namely, the disinfecting action of each of the different kinds of chemicals, and the extent to which the clarified effluent is liable to undergo further putrefaction.

The general results of the investigation are summed up in a series of eleven conclusions, from which it follows that the process is capable of completely removing all suspended matters; but it produces but little effect upon the soluble ingredients, especially the nitrogenous substances and the ammonia. The chemical action is almost entirely due to the added lime. The treatment has a certain disinfecting action upon the sewage, and leads to a most marked reduction of the micro-organisms in the effluent: the sludge, on the contrary, remains in this respect but little affected. Other conclusions have reference to the liability of the effluent to putrefy, and to the imperfect degree of disinfection attained in the case of the poudrette. It is laid down that the effluent should not, without further treatment, be passed into the sewers, and the peat-filtration process is declared to be a disadvantage rather than otherwise.

THE POLLUTION OF THE RIVER ISAR AT MUNICH.⁸

In the course of an inquiry as to the sewerage of Munich, it was desirable to determine the effect of sewage pollution upon the river. Dr. von Widenmayer and Professor von Pettenkofer found that the amount of fecal matters discharged into the Isar produces little permanent pollution, and that it would be possible to adopt a water-carriage system of sewerage for Munich, without the interposition of depositing tanks or filtering beds. It is a fact that the river is

⁷ B. Proskauer: *Zeitschrift für Hygiene*, x, 1891.

⁸ Prof. M. von Pettenkofer: *Deutsche Bauzeitung*, February 18, 1891.

much more free from pollution when it is low than when it is high. It is shown that the 280,000 inhabitants of Munich could only raise the organic matter in one litre of the water of the Isar, at the abnormally low level of a discharge of only 40 cubic metres a second, by seven milligrammes. It is also shown that the solid residue can have nothing to do with excremental pollution, and Professor Pettenkofer asserts that he retreats from his previously expressed opinion that the sewage of Munich would have an injurious effect upon the Isar, and he believes that no injurious results will ensue from the discharge of the raw sewage into the river. He undertakes to prove on a future occasion that the bacteriological investigations do not support the theories of the opponents of the water-carriage system.

SEWERAGE OF MUNICH.⁹

The question as to the sewerage and sewage-disposal of Munich, which has been so much debated, has been finally settled in favor of the water-carriage system, and the scheme only awaits the Government sanction to be put in force. Under the plan adopted, though provision is made for the ultimate employment of filter-beds or tanks, if such should prove necessary, it is proposed to discharge the raw sewage into the Isar, with a tank near the outfall for the retention of floating impurities.

The author reviews a series of publications relating to this subject, and sums up his observations in the following conclusions:

(1) The investigations hitherto conducted into the self-purifying powers of rivers do not warrant any finite verdict respecting the admissibility of the direct introduction of the Munich sewage into the Isar, since too little is yet known of the life-habits of bacteria, more especially of those which are pathogenic.

(2) But the investigations have rendered it evident that, owing to the favorable local conditions which here exist, an experiment may be carried out on a large scale without exposing the towns situated on the River Isar to any material danger.

(3) In the present case this experiment can, if necessary, readily be abandoned, as the site of the sewage outfall renders it possible at once to resort to sewage irrigation.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, January 25, 1892,
Dr. C. F. FOLSOM, Chairman *pro tem.*, presiding.

ORAL COMMUNICATIONS.

TREMOR OF PARALYSIS AGITANS.

DR. MORTON PRINCE: I have here a case which I would like to show, and which is to me one of considerable interest. It is interesting from several points of view. One is that of the diagnosis. This man has, as you see, a curious tremor of the right hand. The character of the tremor is such that, at first sight, if he had been an older man, it might possibly have been mistaken for *paralysis agitans*. It is a case of "tremor

of *paralysis agitans*" following hemiplegia; and I say that, although there is no hemiplegia at the present time. These motor disturbances following hemiplegia are very common, and this particular kind is very well recognized, but in my experience it is comparatively rare. You will notice that the tremor persists while the hand is at rest and that he can control it by strong muscular effort. Volitional action does not increase it. Although I have seen many cases of hemiplegia, I have seen very few cases of this particular kind of tremor. The leg is also affected, so that at times, especially when in a constrained position, the knee will oscillate backwards and forwards. I say it is a case of hemiplegic tremor, although there is apparently no hemiplegia present. The knee-jerks are not increased. The superficial reflexes are not diminished on the right side, and yet I think it is or was a case of hemiplegia, partially from the history and partially from other symptoms still present. If he smiles the left side of his face moves before the right side. When he was first attacked the mouth was pulled to the left. This paralysis has disappeared, but still there is a tendency of the left side of the face to smile first. The right leg, when the patellar tendon is struck, kicks a little quicker than the left leg. Another peculiarity of the case is this: he insists that this tremor come on immediately after a "drunk"; that he waked up in the morning and found his right arm and hand in the same condition that it is now. He is very positive that there was no paralysis at that time, but at the same time I think there probably was some weakness. But the fact that this tremor should have come on in the course of a night, so to speak, is, I think, rather unusual and extraordinary.

A practical question has arisen in connection with this, and one on which I should be glad to receive suggestions; namely, the location of the lesion. Is the lesion in one of the deeper nuclei of the brains, the optic thalamus, or is it cortical? Now, in those cases that have hitherto been reported, lesions have been found in both these situations; although the majority have been in the optic thalamus; but there is a case on record where there was atrophy of the motor convolutions, and to the naked eye no lesion whatsoever in the optic thalamus could be detected. The evidence would seem to show that it is possible that it may be in either of these situations, although I am inclined to believe that the internal capsule cannot be involved in this case. If it is in the optic thalamus, it does not involve the internal capsule.

When I was in London last summer, I saw a case in Mr. Horsley's ward which had been operated on by him. He had removed a portion of the cortex. The patient was in bed at the time, and I do not know what the further result of the case was, but it was evidently considered that the lesion was in the cortex. If there is warrant in thinking that, this case would seem to hold out a certain promise of relief from operation. The patient himself says that the right hand is at present of very little use to him. He says he would be willing to take a certain amount of paralysis if he could regain control of the muscles. The question arises whether there is any likelihood of being able to relieve such a case as this by operation on the cortex. The motion persists during sleep, I think.

TUMOR OF CÆCUM CAUSING INTUSSUSCEPTION.

DR. M. H. RICHARDSON: I have a very rare speci-

⁹ A. Frank: *Gesundheits Ingenieur*, 1891, p. 281.

men which I removed from the cecum a few days ago. It is a lipoma which grew from the internal surface of the cecum by a broad base. As will be seen, the tumor is so large that it nearly fills the normal ascending colon. The upper part of the tumor became grasped by the muscular fibres of the intestinal wall and the whole was forced along dragging the caput cæci behind. In this way an intussusception was started which soon became extreme and required surgical interference.

The patient, C. P., a man of fifty-two years of age, had been in good health, although not robust. At the age of twelve, he had had what was called a bilious colic, and at one time, while young, there was a prolapse of the rectum, upon the surface of which there was said to be a small tumor.

Ten days before I was called to see this man he was taken with what was thought to be the grippe. After a week of slight illness, he was seized with violent pain in the lower part of the abdomen. He had taken a pill of rhubarb the day before and had had a good movement of the bowels at six o'clock Monday morning. During the day his stools, which were rather frequent, began to contain blood. The pain was controlled by morphia. His general condition improved during Monday night and Tuesday morning, although the pain was at times severe. The bloody stools also continued accompanied by occasional attacks of hiccough, but no vomiting.

I first saw him at South Hanover in consultation with Dr. MacMillan, the attending physician, on Tuesday afternoon. At that time his symptoms had improved so much that he expressed himself as feeling well enough to get up and go to his business. By physical examination nothing whatever could be discovered except a fulness in the left hypochondrium, suggesting a distended coil of intestine. It seemed at that time possible that there might be some acute obstruction, but the man's condition was so good as to make operative interference seem needlessome. During the night, and the following day, there was no passage from the bowels except a fluid which was odorless and darkly tinged with blood.

On the next day, Wednesday, Dr. R. H. Fitz saw the case in consultation and advised, on the whole, a laparotomy, on the ground that the man's chances seemed better than to try longer palliative treatment. His diagnosis was intussusception or a twist. On opening the abdomen, bloody serum escaped. A mass was found resembling a kidney at the beginning of the sigmoid flexure. Exploring farther with the hand, the distended and tense coils of the large intestine could be made out. The incision was enlarged and it was found that there was an intussusception starting at the ileo-caecal valve. The invaginated bowel had advanced as far as the sigmoid flexure. The mesenteric attachment of the small intestine was so tens as to suggest the ring-pillars of strangulated hernia. After about forty minutes' effort, during which the patient's condition continued to be remarkably good, the invagination was reduced. This was accomplished only with the greatest difficulty and not till I had about concluded to give up all efforts at reduction and to make an artificial anus. It was accomplished finally by pressing back the invaginated portion by a sort of milking process. When the cecum was delivered it was found to contain some unusual mass. I opened the bowel by longitudinal incision and found a pear-

shaped tumor, broadly pediculated, attached to the mucous surface of the cecum below and to the right of the ileo-caecal valve. It was large enough to entirely fill the cavity of the cecum. The base of the tumor bled freely and required the application of continuous silk suture. The cecum was closed by the interrupted Lambert stitch. Everything was replaced and the line of suture protected by iodoform gauze.

Immediately after the operation the patient's condition became alarming, and it was only after prolonged efforts on the part of Dr. MacMillan that he rallied. On the following morning his condition was very good indeed. There was no vomiting, and the hiccough, which had been very persistent before the operation, had disappeared. I saw him again the following night and found his general condition reassuring except that his pulse was rapid. During the night he failed and died. There was no autopsy.

The tumor, examined by Drs. Fitz and Whitney after removal, was found to be a polyoid lipoma.

DR. C. L. SCUDDER read a paper on

THE MANAGEMENT OF COMPOUND DISLOCATIONS OF THE ANKLE-JOINT.¹

DR. ABNER POST showed

TWO CASES OF COMPOUND FRACTURE AND DISLOCATION AT THE ANKLE-JOINT,²

which occurred, respectively, a year and a half and four years ago.

The first patient, who had lost a portion of the astragalus, walked about the level floor without perceptible limp, but showed considerable disability in going up and down the steps of the hall.

The second case was one in which the tibia had projected through a wound over the inner malleolus. The accident occurred four years previous, and the patient was forty years old at the time. The patient demonstrated the movement at the ankle-joint in all directions, and said that he could see no difference between the two feet.

DR. A. L. MASON read a paper entitled

NOTES ON TYPHOID FROM 670 CASES AT THE BOSTON CITY HOSPITAL IN 1890 AND 1891.³

DR. GEO. B. SHATTUCK: It is true that figures in themselves are apt to be dry; but if they show us that we have made a decided progress from the past, and if they point out how we may make progress in the future with reference to practical results in the improvement of treatment of a disease which is so constant as typhoid fever, and which is with us always, as one may literally say in our large cities now, then figures are not dry. I think that none of us have found that Dr. Mason's paper was dry. On the contrary, it was very interesting and instructive. As well as I remember, Dr. Upham's series of cases (1864-1870), which I tabulated for the City Hospital, gave mortality of something like fourteen per cent, and even if we make no reductions whatever from the cases reported by Dr. Mason, that shows that we have at least kept pace with the tendency to improvement in the death-rate from this disease, which he says, and rightly, is to be found all over the world; and I think we not only have kept pace with it, but more than that. Of course, the interesting practical point upon which

¹ See page 334 of the Journal.

² These cases are reported more fully on page 335 of the Journal.

³ See page 339 of the Journal.

these figures have a bearing is that of the treatment of typhoid fever by Brand's method, whether it should be adopted by us or not. I think that Dr. Mason's paper is a much more reasonable and rational paper and one which certainly, individually I may say, wins my confidence more than that of a great many utterances which have been made in regard to this subject. It seems to me there is nothing in regard to which the proverbial fallacy of statistics may be so applicable as that of any one system of treatment to a disease like typhoid fever, and I think we must take all the statistics with reference to Brand's method with a great deal of caution. Now, if it can be shown that that method or any other will produce a diminution in the death-rate of this disease of two per cent. or more, then it is our duty to adopt the method, whatever the inconvenience and the cost may be. At the same time, it seems to me that it is not injudicious that we should perhaps allow other hospitals and other cities to prove that for us in this country. Certainly the material which we have to deal with, its outside surroundings, the time of admission to the hospital, and our facilities for applying the method,—all these factors differ very much from those which obtain abroad; and it is therefore necessary that the method should be tested especially for us here, and that being the case, it is, it seems to me, as I said, not injudicious that we should allow others to test it for us if they are willing to do so. In New York at Bellevue, in Philadelphia at the German Hospital and elsewhere, they seem disposed to try it. Of course, there are two questions with reference to the adoption of that method. One is the question of therapeutics; the other is the question of hospital administration. If there are only a certain number of reliable attendants who can be secured for any given hospital service, and if there is only a certain amount of money disposable for a hospital service, then I must frankly say that if it is a question between being deprived of either liberality in the way of nourishment and stimulants and other therapeutic measures and of good nursing, — if we have to choose between this and the application of the cold-water treatment according to Brand's method, — I should certainly prefer to have the first mentioned rather than the second. If the hospital facilities and the hospital funds and the hospital administration will permit of both, and it is satisfactorily proved for us in this country that the Brand method will reduce the mortality in our hospital cases by two per cent., then it seems to me that we must have it, and if it is proved that the mortality can be reduced by two per cent., the profession is in such a position and the public is in such a position, that they can demand from municipalities and boards of trustees that sufficient provisions should be made for all necessities as they arise under those circumstances.

If we deduct, as Dr. Mason suggests, the cases which are inevitably fatal, which come in late and die early after admission, and deduct the cases giving a large percentage from intestinal complications such as perforation and hemorrhage — and the ratio at the City Hospital from perforation was a very large one — of course, it reduces the mortality very much indeed, a mortality which is already favorable. I do not think to-day it is claimed by impartial observers with reference to Brand's treatment that his method does reduce these two important and constant factors of hemorrhage and perforation. There is one other thing to be said about it, that those who advocate his

method began by claiming that it was successful on account of combating the hyperpyrexia. Then it was claimed it was successful on account of some mysterious and yet unexplained influence upon the nervous centres. What precisely that action is, has not so far been explained; but all the advocates, Brand himself and all the advocates of his method, constantly reiterate that, in order to have it successful, and in order to have a fair test of the method, it should be applied from the very early stages of the disease, and that is where he has his advantage in dealing with the army cases, not simply that they are young and vigorous, but also he is able to take them from the beginning. Well, that we never can do in our municipal hospitals. The patients come in late, or if they do not come in late, they come in, as Dr. Mason suggests, because they are particularly severe cases. Now, according to the claims of the advocates of this method, a very large percentage of our cases are not suitable subjects for that method; and if the application of the method is unsuccessful in our cases, then the answer is that they were not taken early enough. Then there is a great number of the cases taken very early in the very first days of their symptoms, in regard to which the diagnosis cannot possibly be a positive one, and never would be a positive one if they are rapidly cured. I entirely agree with what Dr. Mason has said in regard to the small value of conclusions drawn from a few cases, and have but very little confidence in intestinal antisepsis.

DR. F. H. WILLIAMS: I have been very much interested in Dr. Mason's paper. Dr. Shattuck has discussed it in its broader features, and there hardly remains anything for me to say except to speak of one or two details. I am very glad to be able to confirm Dr. Mason's observations in regard to the use of hydronaphthalin. It seems to me the intestinal symptoms are decidedly milder, there is less diarrhea, less distension of the abdomen, and the patients are rather more comfortable with hydronaphthalin than without it. With the hydronaphthalin I used a special food through the co-operation of Dr. Rowe, with whom I arranged to use evaporated milk, that is, milk prepared in a way which enables one to give it to a patient in a fresher and better condition than one usually can do. That was used in the typhoid cases during the two months of the service I had last summer. I have not observed a great deal of difference between the hydronaphthalin with and without the evaporated milk. The number of cases, however, was not large enough to base an opinion on.

DR. C. P. PUTNAM: With regard to the source of the contagion, do not the records show where the patient had been a short time previous to entrance, or were the statements only taken from his residence?

DR. MASON: The statement I made was only with reference to the residence of the fatal cases. There was not time to investigate the whole series, so that I cannot answer that question. There was but one fatal case that came from a distant town. The great majority had lived in the city.

DR. GEO. B. SHATTUCK: Since Dr. McCollom read his paper some weeks ago I have questioned my patients pretty carefully as to whether, though residents of Boston, they went to picnics outside, and especially to one dangerous locality, and I have found that only two or three had been to such picnics.

DR. MASON: When I was in Germany twenty years

ago, this matter of cold baths interested me, and it was then that this second edition of Brand was published. Other works were written by Ziemssen, Bartals and Liebermeister. I found that the results varied much in different cities. There was a great difference between the results in Berlin and Vienna, where the method had been tried on a comparatively small scale but without reduction in the mortality; still it has always seemed to me a rational procedure. We recognize the desirability of cold water, of hydrotherapeutics; and I think that if we are going to bathe at all, we might as well use the easiest and most efficient method. It certainly is less trouble for ward attendants to put the patient into the tub-bath and let him lie there than to sponge him fifteen or twenty minutes.

DR. G. W. GAY reported

THREE CASES OF OESOPHAGOTOMY.⁴

DR. RICHARDSON: I would like to know whether in these very interesting cases Dr. Gay made any efforts to detach the foreign body and remove it by the mouth. I think that reasonable attempts should be made in this direction, unless there is some very good reason for not doing so. A few years ago a man came to me with a plate of teeth which had been impacted in his oesophagus eleven months. I made careful observations as to its situation and distance from the incisors. I found that the plate was about opposite the transverse portion of the arch of the aorta, and could probably be reached easily by external oesophagotomy. In testing the firmness of the contraction by means of the coin probang, the plate was detached and removed with the greatest ease. I should therefore think it worth while in all similar cases to make some attempt at removal by the mouth.

There is some danger in the use of the coin probang, especially in attempting to detach plates of teeth. In the first case of the kind which came under my observation, attempts had been made to detach the plate by means of this instrument. The probang got caught in the plate in such a manner that it was impossible either to remove the plate or detach the instrument. The plate had been impacted nearly a year and had become so firmly imbedded that the end of the probang broke off without producing any sensible change in the position of the plate. I believe it is a good plan to make such efforts, however, unless the foreign body has sharp points, or has been very long imbedded. In the latter case, as I have already stated, it seems to me worth while to make gentle attempts. But it must be borne in mind in the use of an instrument like the coin probang, that if it is once fast to the foreign body it may be impossible to detach it, as in the case already referred to; then something must give way — either the instrument, the foreign body, or the part in which it is imbedded. If the foreign body is impacted at the common place — the beginning of the oesophagus — there is less danger of serious injury to the surrounding parts than where it lies deep within the thorax. In some portions of the thorax, and, in fact, in all portions of its course below the aorta, the oesophagus is in very close contact with the heart or with some portion of the aorta itself. It is obvious that violent efforts at removal are very dangerous indeed, and that sudden death may take place during the course of these manipulations. In such cases it is certainly better to follow the plan of Dr. Gay, and to

remove the foreign body by opening the oesophagus, and by intelligent manipulations, than to make any efforts at detachment through the mouth. Even when no attempts have been made to remove foreign bodies by the mouth, numerous cases have resulted in ulceration into the aorta, posterior mediastinum or pleural cavity. In doubtful cases it certainly seems better to perform external oesophagotomy or gastrostomy. External oesophagotomy is one of the most beautiful operations that we have, and now that so much better results follow methods of aseptic surgery, we are justified in making attempts at removal by intelligent dissection and demonstration of the seat and position of the foreign body. I have never observed any bad results from the impaction of foreign bodies in the oesophagus, but such is not the usual experience. Where urgent symptoms exist, as in the cases previously reported by Dr. Gay and Dr. Cheever, I believe that immediate operative interference is imperative.

DR. GAY: The little girl was well in three weeks, and the man lived two months with comparative relief. Towards the end of life we did tracheotomy to relieve the dyspnoea from the pressure of the growth. It did some little good, but not very much.

NEW YORK NEUROLOGICAL SOCIETY.

MEETING of February 2, 1892, the President DR. L. G. GRAY, in the Chair.

PACHYMEMENINGITIS AND MYELITIS.

DR. MARY PUTNAM JACOBI read an account of a case of this condition which was at first supposed to be due to a Pott's disease, but where a solid tumor had developed against the spine during the last weeks of life, and was diagnosed as sarcoma. The case was compared with one related by Dr. Gee in the St. Bartholomew Hospital report, and close resemblances pointed out between them. In Dr. Gee's case the sarcomatous nature of the disease was demonstrated by an autopsy which could not be obtained in the case under discussion.

DR. C. A. HERTER thought it unfortunate that no autopsy had been made in the case reported by Dr. Jacobi as the diagnosis seemed open to a good deal of speculation. There was apparently no justification for the assumption that two lesions existed and a single one would explain the symptoms. This lesion may have been one of sarcoma or tubercular disease, and it would be difficult to determine which; the existence of malignant disease was probably out of the question.

DR. W. H. THOMSON disagreed with the last speaker. The chief point of interest was in the fact that there may have been two distinct lesions in the cord, presenting in their symptoms the contrast in the nature of the lesions. It was well known that in the case of tumors pressing upon the cord there was present as a symptom local pain, especially on movement of the parts. Transverse myelitis there would present this kind of pain, and unless accompanied by distinct meningitis there would be no irritation of nerve roots. Therefore, according to description, there might have been two conditions of the cord occurring in the same patient. The symptoms developing afterwards in the legs were the sequelae of transverse myelitis. Finally, the effect of

⁴ See page 332 of the Journal.

the presence of a tumor invading and spreading into the tissues was simply pressure at that point.

DR. B. SACHS doubted if in the majority of cases there was myelitis associated with the presence of a tumor, though in a tuberculous case these sometimes occurred. Tubercular myelitis was distinguished by being more destructive to the substance of the cord than other forms.

DR. JACOBI said that the reason for supposing that there was a second lesion differing from the original one was the persistence of the epigastric reflexes. It was presumed that there was a tumor of the cord beginning in the first dorsal vertebra, causing a pachymeningitis at that point, followed by a meningitis.

THE SURGICAL TREATMENT OF EPILEPSY,

by DR. JOSEPH PRICE, of Philadelphia.

Epilepsy was defined as an apyreptic nervous affection, characterized by seizures of loss of consciousness with tonic or clonic convulsions. Its history from a therapeutic standpoint was one that taxed the efforts of supreme superstition and defied the sources of scientific medication. Its treatment had been one of trial and disappointment, for it still remained one of the greatest opprobria of medicine. Its attacks were visited upon both sexes, hysterical epilepsy for the most part being confined to females. This latter class were attacked when a marriageable age was reached. Debauchery had frequently led to it.

Young widows were prone to attacks, and its origin, outside of physical causes, might be traced to amorous songs and certain stimulants, such as chocolate and coffee. For its cure various suggestions had been made, among other things that of resorting to venery. It had, however, been abundantly proven that excessive lust had produced epilepsy, and was no doubt yet to be recognized as a great factor in its causation. That it was transmissible did not admit of dispute, any more that it was caused by traumatism. Operative interference in the traumatic cases, for the removal of the cause was both logical and often successful. The operation of clitoridectomy had brought Baker Brown into disrepute, and yet we had to-day no less a person than Lawson Tait boldly expressing the opinion that here was doubtless a place for the operation. The belief that a moral element must be reached in addition to the physical interference was no doubt justified by the facts. One table that the author had consulted gave as high as 73.7% of cases cured of masturbation, by clitoridectomy.

This surely made it not presumptive in its claims for recognition. Epilepsy in women appeared to be more fatal than in men. The acquired epileptic habit was more fatal than the congenital. In the congenital it was two to one, and the acquired three to four, fatalities in women, to one in man. As to the inheritance of the disease, it was sufficient to note that among epileptics marriage should be discouraged. The history of eunuchism as a preventive of epileptic propagation and also the edicts forbidding their marriage were of interest to the student of law as well as to the theologian and physician.

In the treatment of epilepsy proper there was no doubt that surgery must form an important factor in the hope of cure, whether done for direct traumatic results or for the removal of reflex causes. In entering upon the consideration of the removal of the appendages in women for the cure of epilepsy it was unneces-

sary to take up in detail the history of castration as practised upon the male for the same purpose. Suffice to say that the history of this operation, both from a priestly standpoint and from a carnal or musical standpoint was often instructive and oftener horrifying. The mortality was often simply terrible, while the practice of mutilating children to preserve their voices for song, marked an era of refined religious cruelty scarcely conceivable. So far as the surgery of the disease was concerned, in a general way operation had the best of the argument. Out of 71 cases treated medically, and out of a second series of 71 treated surgically, statistics showed that of the surgical treatment all were at least benefited, while the medical series, a great proportion showed no effect at all from treatment, and in others the conditions were aggravated. In a general surgical way then, if operation was beneficial when it could be directly traced to the ovaries or their diseases, logical deduction would seem to indicate that beneficial results might at least be hoped for. So far as unsexing an epileptic was concerned, the author did not understand how or why there was reason to feel compunction at such a suggestion. He could hardly question the protective value to society not only of forbidding epileptics to marry, but of rendering them unable to procreate. A wise legislation would of course be needed, to prevent abuse, but the essential right of society to protect itself ought not to be questioned.

Going aside from the actually demonstrable disease, what was to be done in the presence of epilepsy where disease was doubtful?

If we had an unmarried woman in whom every menstrual period, from the initiation of her puberty to the time that she came under the physician's care, was marked by an epileptic seizure, who at other times was entirely free from attacks and showed no tendency to fall into them, who recovered as soon as the period was over and who had no other demonstrable disease, or probable cause of seizures than her monthly irritation, it seemed there was little doubt that operation was justifiable. Unless we could thus pin down the seizures to definite time and cause, the author held that it was wrong to burden surgery with a class of cases that could only fail to detract from its good name, while it did no possible good to the individual. If ovarian disease was found to be the cause of the epileptic seizures it was of no use to do a partial removal and expect relief or cure. The effect obtained might be due to either one or two causes; first to the removal of an irritable or diseased organ whose presence stirred up the reflexes into a commotion, or the relief might be due to the excitation by operation of a different epilepto-genic zone. Charcot had laid down as a principle that irritation of one epileptic zone might be relieved by irritation or pressure upon another. Assuming it as a fact that the disease was often a reflex manifestation of a local trouble, it followed that in those diseases in which deposits were found as a result of systemic affection, resort should be had to recognized remedies, and the chances for effecting a cure were equal with those of surgical cases where operative interference was resorted to.

DR. H. J. BOLDT, in opening the discussion of Dr. Price's paper, thought that some nervous diseases might be due to menstrual disorders, but they were not numerous. The removal of adnexa was one of the gravest operations in surgery, both in its medical and

medico-legal aspects. It was most important to select cases. When absolute pathological conditions were present, and treatment had been carried on unsuccessfully by all the methods known to the profession, and when the gross lesion could be discovered to be present in the adnexa, then operation was perhaps justifiable, and good results might accrue. If the epileptic attacks were restricted to the menstrual period, and it was concluded that the prime cause lay in the adnexa, then operation might be resorted to, but little else but bad results was to be expected.

DR. G. M. HAMMOND thought that two points should be borne in mind, the establishment of the epileptic habit, and the influence of pathological conditions of the uterus and ovaries in producing epilepsy. The fact that operations performed on the brain for the relief of epilepsy when there existed a well-defined lesion were not in the majority of cases followed by cure of the seizures was well known now. The habit persisted, and many of the cases so operated upon were reported cured too soon. The condition was in fact only abated or dormant for a more or less limited period. As to the influence of abnormalities of the genital apparatus in the production of epilepsy, it seemed to the speaker that those of the uterus were more potent than those of the ovaries. Lacerations, malpositions and inflammations of the uterus were more likely to cause epileptic seizures than irritation of the ovaries. At a time when gynaecologists were removing ovaries by the bushel, the speaker had sought to inform himself of some of the results by writing to a number of asylums. The questions put were as to the cases of melancholia in which operation had been done. He had received a stock of reports. The consensus of opinion was to the effect that epilepsy and insanity had not been relieved by removal of the ovaries. As to the effect of ovariotomy in producing insanity, he had seen four or five cases of epilepsy and hystero-epilepsy come on in a few days after ovariotomy was performed. Others had met with the same experience. While he had seen some cases of insanity and melancholia recover after relief from uterine irritation, he had never seen such result follow ovariotomy.

DR. BUCKMEISTER said it was hardly fair to call epilepsy a disease. It was a collection of symptoms which had no anatomical basis. It was influenced by irritation of all kinds, and naturally those produced in the reproductive organs would be of the most marked character, though observers were not agreed upon the exact role which these organs played in this respect. The previous speaker was probably correct in assuming that more irritation could arise from injuries of the uterus than from lesions in the tubes or ovaries. Evidence was so strong that no good was accomplished by ovariotomy in the conditions under consideration that the operation was to be condemned.

DR. W. M. POLK said his experience of the results of operations for the cure of hystero-epilepsy was limited to three cases and was not such as to embolden him to continue the procedure. Two of the patients had become insane, and the third one was in a distressing condition of nervous irritability. Epilepsy was still really a fruitful field for investigation. It must be remembered that eighty per cent. of women were stated to be hysterical.

A large amount of epilepsy was known to be due to peripheral irritation, and there was no reason why the

ovaries should not set up some of this. If they did this, they should be taken out.

DR. SACHS had seen a number of cases in which operation had been done, and with no effect upon the epilepsy. It was a mistake to remove ovaries because the patient had epilepsy at the menstrual period. If it could be proven that the person had no congenital epilepsy, and that the first attack came on with menstruation and had occurred constantly since, but only at the menstrual period, there might be some fair reason to remove some of the sexual organs. Because a woman was an epileptic and had sensitive organs which could be removed, was a ridiculous argument in favor of the removal.

DR. L. WEBER did not take the view that the irritation following lacerations of the uterus was a cause of epilepsy. In a large experience of twenty-eight years he had never seen more than two cases in which the epileptic condition had been thus induced unless there was a history of hysterical or epileptoid taint before the age of puberty. He believed that true epilepsy acquired from lesions of the genital organs was a rare condition. He would only give his consent to operation interference on very narrow grounds, and where there was a fair hope that by removal of the ovary the condition could be cured.

DR. BUCKMEISTER explained that he did not mean that injuries to the uterus following parturition were active in producing epilepsy, but that of all lesions to the reproductive organs these were most likely to act as irritants, and were, therefore, quite likely to result in the nervous condition under discussion.

THE PRESIDENT said that all neurologists were agreed that what was called the epileptic state was nothing more than a symptom indicating intra-cranial disturbance, spinal or peripheral nerve irritation, or inflammation of the visceral nerves. The most frequent source of the symptom lay in intra-cranial disorders. Spinal epilepsy was rare as was also that arising from peripheral irritation. How important a part the abdominal nervous system played was not quite known. But the most uncertain of all was the influence of the female organs in producing the epileptic symptom. At any rate there was not a single reputable record of the cure of epilepsy; not one that would stand the test of examination. To report relief for a few months, or even a few years, was to report nothing; and this was all that had been done. Almost every therapeutic or surgical measure had done good, but there was nothing more in the way of cure reported by modern effort than could be found chronicled by Escarol in 1828.

DR. PRICE closed the discussion by reiterating his opinion that permanent benefit was possible in properly selected cases.

ANCIENT HINDU VACCINATION.—At a meeting of the Epidemiological Society (*Lancet*, February 29, 1892), Dr. Pringle quoted a remarkable passage from an ancient Hindu work, which showed that true vaccination was known and practised in India centuries before the birth of Jenner: "The small-pox produced from the udder of the cow will be of the same mild nature as the original disease . . . the pock should be of a good color, filled with a clear liquid, and surrounded by a circle of red. . . . There will be only a slight fever of one, two or three days, but no fear need be entertained of small-pox so long as life endures."

Recent Literature.

A Manual of Practical Hygiene. By E. A. PARKES, M.D., F.R.S. Eighth edition, pp. 769. Edited by J. LANE MOTTER, M.A., M.D. Philadelphia: P. Blakiston, Son & Co. 1891.

There is no more progressive department of the science of medicine than that which relates to public hygiene, a fact which is shown in the demand for frequent revisions of practical standard works upon the subject.

The editions of this excellent work which were issued after Dr. Parkes's death in 1876, were edited by Professor De Charmont, whose rich experience added great value to the work.

The present editor has brought the work down to date by the careful addition of new and important matter, and the omission of such as had become obsolete.

The arrangement of the contents has been slightly changed from that of the earlier editions, and the chapters are as follows: 1. Soils; 2. Water; 3. Removal of Excreta; 4. Air; 5. Ventilation; 6. Habitats; 7. Warning of Houses; 8. Food; 9. Quality, Choice and Cooking of Food; 10. Beverages and Condiments; 11. Exercise; 12. Clothing; 13. Individual Hygiene; 14. Disposal of the Dead; 15. Climate; 16. Meteorology; 17. Disinfection; 18. Prevention of Disease.

The second part is devoted to military hygiene, and the third part to chemical and microscopic examination.

Lessons in the Diagnosis and Treatment of Eye Diseases. By CASEY A. WOOD, M.D. With numerous wood cuts. 12mo, 154 pp. Detroit, Mich.: George S. Davis.

This little book is one of the leisure-hour series, and while it necessarily suffers from the attempt to put much into small space, nevertheless it is the best of the numerous small hand-books which have been issued in later years. For its purpose, as an aid to the general practitioner without taking too much time to "look the matter up," it will no doubt serve a useful purpose.

The Complete Medical Formulary and Physician's Vade-Mecum. Containing more than 2,500 prescriptions, also a special list of new drugs with their dosage, solubilities and therapeutic applications, together with a large number of other tables. Collected for the use of practitioners, by J. C. WILSON, A.M., M.D., Physician to the German Hospital, Philadelphia: J. B. Lippincott & Co. 1892.

This volume, as its name implies, is a collection of prescriptions arranged under the head of diseases. The prescriptions are taken from a large number of authorities, in all cases credit is given to the authority. There are also several tables containing useful information. Except for these the book may be said to be nothing but prescriptions, without any reading matter whatever. It is to be hoped that few practitioners would rely upon such a compilation to any extent. On the other hand, it might be useful to any physician as an occasional reference or inspiration. Although it is bound in the form of a book for the pocket, it would be found bulky to carry in anything smaller than an overcoat.

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THE OBLIGATIONS OF MEDICINE TO PHYSIOLOGY, AND OF PHYSIOLOGY TO MEDICINE.

THE dependence of medicine, both as a science and an art, on physiology is everywhere recognized. Disease is but a disturbance of the normal conditions of the organism, and the aim of the physician must always be to restore the physiological integrity. If this proposition be sound, then medicine must advance *pari passu* with physiology. This will be found to be true of ages when physiology was unprogressive; medicine was at a standstill or pursuing empirical *ignes fatui*. Out of innumerable instances we will cite only one—the senseless infatuation for bleeding of a former generation. If bleeding as a routine therapeutic measure in the treatment of acute inflammatory affections has gone out of use, this is chiefly because it has been found opposed to the teachings of an enlightened physiology.

If physiology has made any progress in any age, such progress has been accomplished through experiment, and largely through experiments on animals. It is quite possible for a physiology to be founded on observation alone, but such a physiology could not get beyond a few simple rules respecting the conditions of function, or in any way satisfy human needs. The same may be said of "the medicine of observation"—to use an expression of Claude Bernard. Notwithstanding the large debt which we owe to clinical observation, which has laid the foundation of our knowledge of diseases, it is evident that its status and its progress lie wholly within the domain of empiricism.

These truths are sufficiently familiar to medical men, and the illustrations are abundant. Among those most often cited to prove the utility of vivisection are the discovery of the circulation of the blood in the seventeenth century, and the bacteriological discoveries of the present epoch; no one pretends that these discoveries and the consequences flowing therefrom, so important to medical and surgical therapeutics, could

ever have been brought about without vivisection. The opposition to vivisection has never come from medical men: if the anti-vivisectionist party has been able to attract to its ranks, here and there, a physician of some note, such support has been tendered from sentimental, political or other purely selfish consideration, rather than from any devotion to science or any principle of liberal humanitarianism.

The rank and file of the medical profession are united in approbation of the work of the experimental physiologists, and recognize the fact that too few, rather than too many, have the time, the means and the ability to engage in original researches whose practical outcome is helpful to science and beneficial to humanity. Physicians should be the educators of society in matters connected with the progress of medicine by experimentation, and if from time to time they have to acknowledge their remissness in this respect, they are ready to welcome the aid of lay writers, who, like the Rev. Lionel J. Wallace in the *Westminster Review* for March, 1892, have set forth the advantages accruing to mankind from vivisection.

It may not be that we are in any special danger from anti-vivisection legislation in this country, but cranks of the same nature abound here as have inflicted on Great Britain an obstructive enactment whose effects in stifling original investigation are keenly felt by our transatlantic *confrères*.

Rev. Dr. Wallace, in the *Review* aforesaid, begins with the twofold inquiry concerning vivisection; Is it useful? Is it moral? With regard to the first, he urges, with Darwin, that physiology can progress only by the aid of experiments on living animals. This is proved by contrasting the past with the present. Accounts of old-fashioned surgery read like a bad dream. Boiling pitch or oil, red-hot knives, corrosive sublimate used to stop the hemorrhages from wounds, and in four out of five cases used in vain, made the surgery of our forefathers horrible. If the luckless patient survived the actual operation and escaped bleeding to death, he very often succumbed to fever, or mortification ensuing on the violent means employed for his cure. Everything is now changed. During the insensibility induced by an anesthetic, the knife does its work swiftly and cleanly; the severed vessels are securely tied; the wound dressed antisepically, and the patient awakes as from a sleep. That this change has been mainly owing to knowledge acquired by vivisection. Mr. Wallace next shows. He goes back to the immortal discovery of Harvey, which never could have been demonstrated without vivisection, and he then appeals to the writings of Jean Louis Petit, of Ambrose Paré, of John Hunter, etc., who admit that by means of the help obtained from experiments on living animals, all their most momentous discoveries were made. "By carefully conducted amputations performed on dogs, the best method of tying the great vessels and preventing excessive hemorrhage were found; an experiment on the antlers of a stag suggested some of the resources of collateral circulation:

ligatures bound around the arteries of dogs confirmed the facts thus suggested. The successful accomplishment of a now not excessively rare operation, the excision of a part of the intestine, was rendered possible by an experiment on the living animal."

The writer next enters the domain of therapeutics, and shows how much we are indebted to experiments on animals for the knowledge which we now possess of the physiological and toxicological effects of strychnia, digitalis, chloral, aconite, straphanthus, and other drugs. That therapeutics has immensely benefited by this knowledge, no really sane person would deny.

It is in the domain of the nervous system that we now resort to vivisection. Mr. Wallace reviews the labors of Sir Charles Bell and of Claude Bernard, though he singularly enough omits all mention of Louget, Flourens, Magendie, Vulpian, Brown-Séquard and other French, besides numerous equally well known German, experimenters. After glancing at the practical outcome of those discoverer which have thrown a flood of light upon the functions of nearly every part of the nervous system, he takes up bacteriology with which present science is so much interested, and shows all the dependence of bacteriology on physiological experimentations. Into this subject we need not enter, as the readers of this JOURNAL are sufficiently familiar with these investigations and their results to medicine, surgery, and obstetrics from a prophylactic and curative point of view. He now takes up the charge of immorality.

Briefly summed up, the arguments of the anti-vivisectionists appear to amount to this: That even granting that occasionally some good results have been gained by means of vivisection, the pain inflicted is altogether out of proportion to the results achieved; that, however, no results can justify man in inflicting excruciating agony upon any living creature, for in so doing he outrages one of the highest moral laws; besides which the practice tends to debase the mind and harden the heart, and it is of far more importance that the mind shall be pure and the heart tender than that a curse should be found for any bodily disease.

To which the vivisectionists reply: We deny that the pain inflicted is out of proportion to the results achieved; on the contrary, we assert (and we challenge our opponents to impugn the assertion) that the pain is trifling in comparison with the benefits conferred. A minority must always suffer for the majority, and so far from outraging any ethical law by sacrificing a certain number of animals, we believe that we would be guilty of a serious moral wrong if we abstained from this sacrifice, since by our experiments we may give relief to millions of men and beasts. While to stand idly watching the ravages of disease, which, by certain measures we might prevent or diminish, would certainly suggest and induce a condition of callousness and mental degradation. We have no right to withhold from suffering humanity any good thing which it is possible to give it.

The writer of the *Review* article believes that a

great moral force in working on behalf of the physiologists. Suffering and death are on every side of them, and if, by any fair means, they can alleviate the one and retard the other, they have no right to neglect these means. They are, so far as their power extends, debtors to humanity, and they would act an immoral part if they declined to make any legitimate effort to discharge this debt. This the anti-vivisectionists will not see or will not acknowledge. They are not satisfied with merely denying the fairness of the means, but they deny the morality of the whole science, not perceiving that in so doing they place themselves in a serious dilemma. For none save the most bigoted would deny the lawfulness of putting an animal to death for some useful purpose. Few would refuse sanction to the infliction of a certain amount of pain if the object thus gained were good. The butcher is counted a respectable member of society though he puts many animals to death, and some of them by a method not essentially painless, because he kills them for food. If he were to slaughter them merely for amusement, or through sheer wantonness, he and his actions would at once become immoral. But if a single butcher were to do this, it would not lead any rational person to assert that the trade was an immoral one. The fact of one or a hundred physiologists experimenting through curiosity or from an entirely selfish love of knowledge does not render vivisection immoral, if it can be shown that the science in general tends to good. It is indeed conceivable that vivisection might develop into a something ethically wrong; but with the safeguards secured by the State, on the one hand, and on the other, by the fact that men of science are not, as a rule, necessarily brutal or wanton, and have some regard for virtue, concrete as well as abstract, this does not seem likely to be an immediate danger.

THE THIRTEENTH ANNUAL REPORT OF THE MASSACHUSETTS BOARD OF LUNACY AND CHARITY.

The reported number of insane under supervision of this Board is 5,944, an increase of 232 during the year 1891, to further swell the accumulation of inmates of our already long-overcrowded institutions for the insane. The aggregate number of persons admitted to the different State hospitals for the first time is 1,238 against 1,122 for the preceding year. Of this number 632 are patients suffering from the acute curable forms of insanity (exclusive of alcoholic cases) against 695 in 1890.

Some relief to these gloomy statistics is offered by an unusual increase of three per cent. in the number of reported recoveries at the lunatic hospitals over that of the preceding year. This is particularly encouraging as it is a gain not to be accounted for by any increase of new cases nor by the advent of any unusual number of habitual drunkards, of cases of toxic insanity, delirium tremens and the like, which so often swell lists of reported "cures." If this happens when

our hospitals are crowded as never before, the deduction must be either that proper accommodations and good care — such as the Board strongly advocates in the erection of the proposed chronic asylum at Medfield — will still further increase these figures, perhaps to those reported in England and Scotland, or that, as a few respected authorities would have us believe, recoveries among the insane are by no means necessarily the most frequent when their care is the best and the methods the most approved.

There is the usual depressing chapter — to which we annually recur — of reports on the condition of the town almshouses and the insane therein, who now number 806. Although there is some surface improvement in their care, the neglect of these unfortunates is practically the same as ever, and will so continue until the State adopts the plan of supporting all the dependent insane within her borders, a practice recently adopted in New York, and in vogue in several other States. To our mind the relief of these unfortunates will hardly be brought about, as the Board hopes, by the erection of the chronic asylum at Medfield, even in the event, which is by no means in the near future, of the rate of board becoming there "so low as to enable every town to board its insane there as cheaply as at home." Witness the large chronic asylum at Willard, in New York, with its low rate of board, which has long existed side by side with county almshouses, in which were large numbers of disgracefully-treated insane whose care that State has only just now undertaken.

There is, to be sure, every reason for alleviating the condition of the insane in the State hospitals by preventing overcrowding through new provisions for their care, but it should not be forgotten that their condition is even now one of great comfort beside that of the almshouse insane, and that efforts for the relief of both these classes should go hand-in-hand. No greater philanthropic endeavor could be instituted than immediate work in the line of exclusive State (as distinguished from town) care of the insane.

The boarding-out system for the insane is still classed as an experiment, although now in not unsuccessful operation (except as a relief to the numbers in the hospitals) for seven years. It is acknowledged that a few have been made happier thereby, some self-supporting, some well in mind and body, and that the system is well worth continuing. It is, however, thought to have reached its numerical limit — the number averaging 142 — and to have been an expensive undertaking. The former statement cannot yet, we believe, be confidently predicted, and the latter does not appear from the usual calculation of cost *per capita*, if made from the figures given. In fact, the cost compares very favorably with, and is, as a rule, less, than that incurred for the support of the same patients when in asylums.

Dr. Moulton, the former inspector, contributes a thoughtful and discriminating paper on "Lunacy Administration in Scotland," which we wish space would

allow us to comment upon at length. Much of it is devoted to a comparison of the boarding-out system in that country and at home. His views thereon are particularly valuable, owing to his practical experience in developing the system in Massachusetts. He is, on the whole, favorably inclined to such a provision; but although he touches upon the improved care received in the homes of such patients in this country, we miss the warm advocacy of the measure and of its development in this country which his former reports and other contributions would lead us to expect.

THE ANNUAL REPORT OF THE BOSTON CITY BOARD OF HEALTH.

THE annual report of the Board of Health for the year 1891 shows that the city is in good sanitary condition. The deaths during the year were 10,571, an excess of 390 deaths over the number of the previous year. This increase is in part accounted for by the unusually large number of deaths from cholera infantum during the summer months, which were marked by a continued higher temperature and an excess of humidity over 1890. The advent of the epidemic of influenza in December, and its influence on other diseases, increased the number of deaths during the latter month to 1,133, as against 850 for the same month of the previous year. The population is estimated at 459,062, and on this basis the death-rate for the calendar year is 23.02, an increase of .32 over the rate of the previous year. The deaths due to zymotic diseases show a smaller percentage of the total mortality than in any year since the Board was established, being about 15.27 of the total number of deaths. There were only 232 deaths from diphtheria, as against 401 the preceding year and an average of 426 for the ten previous years. There was a slight increase in the deaths from scarlet fever. There were fewer deaths from typhoid fever than the average, and the percentage to the number of cases reported shows that the disease was of a milder type than usual. One thousand and three hundred and fifty-two deaths were reported as due to consumption of the lungs, 1,149 to "inflammation of the lungs," 1,071 to pneumonia, 597 to cholera infantum, and 494 to "heart disease, unclassified." Three thousand one hundred and fourteen deaths were due to diseases of respiration, and 3,608 were children under five years of age. There were 5,712 cases of contagious disease reported to the Board, as against 4,370 in 1890, but the deaths from these diseases fell from 617 in 1890 to 471. There were 1,327 cases of scarlet fever with 64 deaths; 2,588 cases of measles with 21 deaths; 966 cases of typhoid fever with 154 deaths.

Concerning influenza, the report says that the occurrence of this disease every fifteen or twenty years, its apparent disappearance at the end of a year, and its recurrence at the end of two years are extremely interesting facts. The second epidemic, through which the city has just passed, although not so general as

the epidemic of two years ago, has had, in proportion to its extent, much greater influence on the death-rate from acute pulmonary diseases. The effect of the first epidemic, however, on the death-rate from chronic pulmonary diseases was much more marked than that of the second. It may be safely stated that, directly or indirectly, this last epidemic of influenza has increased the mortality-rate of Boston from 21.28, the estimated rate per thousand for 1891, to 23.02, the actual rate for the same year.

The effect of deaths from consumption on the death-rate of Boston is not fully appreciated by the general public. The percentage of deaths from this cause is larger in this city than in many of the cities either in this country or in Europe. In addition to the infectious nature of this disease, crowded and overheated halls, workshops and dwellings,^{out} important factors in causing its prevalence.

The cases of typhoid fever are carefully tabulated and studied, and the statistics, carefully compiled, make it evident that neither the water-supply, nor made land, nor imperfect drainage, can be considered responsible for the comparative prevalence of typhoid fever in Boston, but that the frequency of this disease must be attributed to other causes than those over which the Board of Health has control.

For more than a year the Board has endeavored to inaugurate a system of medical inspection for the schools by which the spread of contagious diseases would, it believes, be diminished and many other dangers of school-life avoided. An appropriation of \$5,000 for this purpose was transferred to another department before the system could be organized, and it will be necessary to wait until another appropriation can be obtained.

In his report the physician to the Board states that 43 cases, reported as small-pox, were examined, but that in no instance was small-pox found to exist. This has been the first year since 1879 in which there has not been a single case in the city for a period of twelve months. With regard to diphtheria and scarlet fever the fact brought out clearly in his report a year ago is again mentioned, that with the opening of the school year the number of cases steadily rises, and that it is by far the least frequent during the months when the schools are closed.

The report of the physician at Quarantine shows that 52 patients were treated in the Quarantine Hospital, of which number 32 were cases of measles and 8 were detained for observation. Six hundred and thirteen vessels were boarded and 35,577 immigrants inspected. No case of contagious disease existing at the time of arrival in Quarantine had escaped notice.

MEDICAL NOTES.

MORE TYPHUS CASES IN NEW YORK.—Three new cases of typhus fever have been discovered by the health authorities in New York, and the sufferers were removed to North Brothers Island.

JEWISH IMMIGRATION.—The recent attempts to regulate the flood of immigration into the United States has been the cause of anxiety in England, lest some of the Russian Jews should turn in that direction. In the House of Commons a member asked the Government whether it intended to introduce a bill limiting or prohibiting their admission into the United Kingdom. Mr. Balfour, in reply, stated that at present there was nothing to justify such a bill. The expectation that a large number of Jews would come to England was based upon the belief that the United States would be closed against them, but inquiry showed that there was little reason to fear such a catastrophe. The fact that Austria and Germany have closed their frontiers against these immigrants makes the position of England still more safe.

AN OUTBREAK OF SMALL-POX IN LONDON.—During the past week a large number of cases of small-pox have been reported in London. Whereas during the four months previous there were only five cases, last week there were forty patients under charge of one of the local Boards of Health. The northeast and eastern districts are especially affected.

NEW MEDICAL PERIODICALS.—The *Iowa Medical and Surgical Reporter*, a new monthly medical journal, appeared for the first time with the March issue. It is published in Des Moines, Iowa, and is edited by John W. Overton, M.D. The *Archives Cliniques de Bordeaux*, a monthly journal, under the editorial charge of M. le Dr. W. Dubreuilh appeared in Bordeaux in January. The *National Medical Review*, a monthly journal, edited by Chas. H. Stowell, M.D., to be devoted to current medical literature, appeared in March.

NEW ENGLAND.

MEDICAL INSPECTOR OF IMMIGRANTS IN BOSTON.—Dr. Fairfax Irwin, surgeon in the Marine Hospital service, has been detailed as medical inspector of immigrants at the port of Boston.

MORTALITY FOR THE WEEK IN BOSTON.—The death-rate for Boston for the week remains high. The number of deaths reported has been 240, making the death-rate 27.2. The deaths from consumption were 27, pneumonia 31, bronchitis 13. The number of persons over sixty years of age was 51.

MASSACHUSETTS LEGISLATURE.—The Committee on Public Charitable Institutions have reported leave to withdraw on the petition of the Carney Hospital for a State appropriation of \$10,000. The Committee on Agriculture have reported a bill to prevent the spread of tuberculosis by more thorough inspection of cattle.

NEW YORK.

EXECUTION BY ELECTRICITY.—The eighth electrical execution in the State took place at Sing Sing prison on March 28th, and the efficiency of the method in causing death in a prompt and painless manner can now be regarded as positively assured. In most of the executions some slight variations were

made in the application of the current, with a view, probably, of determining the most satisfactory details of procedure in such cases.

UNIVERSITY OF THE CITY OF NEW YORK.—The fifty-first Annual Commencement of the Medical Department of the University of the City of New York was held at the Metropolitan Opera House on March 29th. The first Faculty prize for general proficiency at the final examinations was awarded to S. C. Minor, who was also the valedictorian of the class. The address to the graduates, who numbered one hundred and sixty-two, was delivered by the Rev. George Alexander, D.D.

A TOY BALLOON IN THE THROAT.—At a coroner's inquest the other day, a novel cause of death was brought to light. A little girl, eleven years old, was playing in the street with a penny toy balloon, and during a sudden inspiration, this was drawn into the upper air-passages. Death from asphyxia resulted before medical aid could be summoned, and at the autopsy the balloon was found lodged in the throat.

REPORT OF THE COMMITTEE ON THE CONDITION OF THE INSANE.—The advisory committee appointed by the Mayor to examine into the condition of the insane under the care of the city, and report on the advisability of transferring this class of dependents to the charge of the State, as the municipal authorities have the option of doing under the provisions of the State Care Act, on March 22d handed in their report, and in it they advise that this change be not effected. In the prosecution of its labors, the committee visited and thoroughly inspected all of the city's institutions for the insane, both on the Islands and at Central Islip, Long Island, and afterwards visited the State Hospitals for the Insane at Binghamton and other places.

While the state of affairs at the farm at Central Islip was, on the whole, very satisfactory, that at the asylums on Blackwell's, Ward's and Hart's Islands, was found to be the reverse. "The condition of these insane poor," says the report, "is pitiable. Their accommodations are a reproach to humanity. Overcrowding exists in every building of every department, and their wretched existence is rendered still more intolerable by the absence of comfortable surroundings, of proper accommodations of every kind, and by insufficient protection, in the case of many of the smaller buildings, from the inclemency of the weather. There is also the danger of fire, which in the inflammable wooden buildings would be certain to result in large loss of life." The State care of the insane at Binghamton and Willard, except in the matter of buildings and the absence of overcrowding, and perhaps that a better quality of meat was supplied to the inmates, was not found better than that of the city; while the cost of maintenance was considerably greater.

Having advised that the city's insane be not turned over to the State, the committee offers certain recom-

mendations. The first of these is that the appropriation for supplies be made more definite to each institution separately, and that the *per capita* allowance be increased at least fifty cents a week. "The insane should be removed from the neighborhood of the convicts and paupers," the report continues. "They should be given all the comforts possible, and those who take care of them should be fairly dealt with. The lot of these attendants is not a pleasant one. Their pay should be adequate, and their quarters pleasant. Meat should be of a better quality. Every straw bed should be burned up at once, and wire mattresses substituted without delay." It is also recommended that the pay of the General Medical Superintendent be increased, and that he be given full power to appoint and remove his subordinates. The committee then recommends that the care of the city's insane be confined to a separate department and that this class be provided for wholly on Ward's Island and at Central Islip, where the accommodations should be properly enlarged for the purpose; the buildings on Hart's and Blackwell's Islands being needed for paupers and criminals. It is also urged that application be at once made to the Legislature for permission for the city to purchase that part of Ward's Island which it does not already own; that the city ask to be relieved from the payment of State taxes for the care of the State's insane; and, lastly, that the Legislature be asked to authorize an issue of bonds to the amount of \$1,500,000, for the purchase of property at Ward's Island and Central Islip, and for the erection of new buildings for the insane at both places.

Miscellany.

EXTRAORDINARY MUTILATIONS FROM A RAILWAY ACCIDENT.

MRS. HOMER R. BALDWIN has brought suit for \$250,000 against the New York Central and Hudson River Railroad Company on account of injuries received in the accident on the road which occurred near Hastings on Christmas Eve last; and, in view of the frightful mutilations she has received and the terrible amount of suffering involved, it is probable that a jury will award her the sum asked, or, at all events, a large proportion of it, especially as she announces that she will devote all the money received to the founding of a charitable institution for women.

This is undoubtedly one of the most remarkable cases on record. In the accident she received a fracture at the right elbow, both hands were mangled, and she was scalded in the most shocking manner about the chest, neck, head and face, including the mouth and upper air-passages, by escaping steam. It was thought at first that she could not possibly survive more than a few hours, but her endurance and tenacity of life were astonishing. She was treated for a number of weeks at the St. John's Riverside Hospital, at Yonkers, and afterwards removed to a hotel in that city. On January 1st, her right hand and the fingers of the left hand were amputated, and her condition

was so critical at the time, that the operations were performed without the use of an anesthetic. In the mean time both ears had sloughed off, and the sloughing away of the scalp laid bare a large surface of cranial bone. After a time skin-grafting was commenced on an extensive scale, and proved successful on the face and neck, though not to a satisfactory extent on the scalp. In the latter part of February a destructive inflammatory process commenced in both eyes, and this proved so disastrous that total blindness resulted, and it finally became necessary to excise both eyeballs. This was done on March 19th, by Dr. P. A. Callan, of New York, and at the same time a number of dead bones were removed from the left hand by Dr. Emil Schopen, the regular attendant in the case. It had been the intention also to scrape away a considerable amount of necroscopic tissue from the exposed skull, but as the patient showed signs of sinking, this was postponed until a later time.

Throughout the entire history of the case Mrs. Baldwin, though never for a moment free from pain, unless when asleep or under the influence of narcotics, has shown the most extraordinary fortitude and cheerfulness, and since the operations just mentioned her general condition has improved to a considerable extent, though her wasted body still weighs only about sixty pounds.

SUGGESTIONS FOR THE REGULATION OF DAIRY FARMS.

In a paper on "Cow's Milk in relation to Human Health and Disease," Dr. H. E. Armstrong,¹ Medical Officer of Health at Newcastle, commends the system of milk-supply and distribution in operation at Copenhagen, and offers the following suggestions for adoption in England:

- (1) That all conditions relating to the production, storage, and distribution of milk should be under State control and regulation.
- (2) That every cow with tuberculosis (proved or reasonably suspected) on a dairy farm should be slaughtered and the owner compensated.
- (3) That all milk by the consumption of which there is risk of the spread of any infectious disease to human beings should be at once destroyed, and, where no blame respecting such risk attaches to the owner, that he should be compensated.
- (4) That the sanitary authorities of towns should have power to license and control the sale of milk sent into their districts from farms outside, and to prevent the sale of such milk, unless satisfied as to the sanitary conditions under which it is produced, stored, or distributed.
- (5) That, in outbreaks of infectious disease associated with milk-supply, the sanitary authority should have power to demand from the retailer the name and address of the producer of the milk.
- (6) That in outbreaks of infectious disease in any district, due to milk sent from another district, the sanitary authority of the district in which the disease breaks out should have power, without delay, to inspect the dairy, and, if necessary, prohibit by their officers the sale of the milk.
- (7) That the sanitary authorities of rural districts from which milk is sent for sale into urban districts

¹ The Practitioner, March, 1892.

should be to some extent responsible to such urban districts for the sanitary condition of the dairy farms on which such milk is produced; and that they should inform such urban authorities of any infectious disease or other condition at such dairy farms whereby the wholesomeness of the milk is likely to be affected injuriously.

(8) That rural sanitary authorities should be required to provide hospital accommodation for the isolation of cases of infectious disease occurring among dairy operatives.

CASTRATION AS A PUNISHMENT FOR CRIME.

At the last meeting of the New York Society for Medical Jurisprudence, Dr. William A. Hammond, of Washington, read a humorous paper entitled, "A New Substitute for Capital Punishment and Means for Preventing the Propagation of Criminals." The substitute was castration, and the following are extracts from the paper:

"A man places greater value on his generative powers than on his life. As a French writer has said, 'the dignity of a man resides in his testicles.'

"The author has several times put the question to criminals under sentence of death, and they all said they would rather hang than be deprived of their testicles.

"Castration would have the effect of making the criminal of some use to society. A dead man is of no use to society, and a man in prison is almost as bad. There are many occupations that would be open to him; he could occupy any position in which boldness or originality are not essential. Possibly he might make a good clergyman. He would not make a soldier, or a sailor, or a policeman, but he could edit a mild newspaper or make an efficient member of the legislative body. The value of eunuchs as singers has long been known. They would make excellent dry-nurses and safe type-writers.

"The scope of this paper was restricted to the male sex. Women have become so accustomed to removal of the ovaries, and these organs are so much less essential to womanhood than the testicles are to manhood, that it might be necessary to substitute imprisonment for life in their case."

METEOROLOGICAL RECORD.

For the week ending March 26, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Baro-meter	Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.
	Daily mean.	Maximum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	
S. - 20	59.00	31.34	27	58.84	56	S. W.	W.	32	28	C.	0.
M. - 21	30.31	49.34	51	51	46	N.	S.	17	12	G.	0.
T. - 22	30.42	31.45	19	49	49	S. W.	S.	12	12	G.	.02
W. - 23	29.98	49	30	91.72	92	S. W.	S.	14	4	R.	0.
T. - 24	30.06	46	34	50	51	W.	W.	12	8	C.	0.
F. - 25	30.03	42	50	58	59	SW.	E.	12	8	C.	0.
S. - 26	29.90	46	47	33	51	59	60	N.W.	S.	4	4 C.
MEAN											
	36.08	36	43	28	58	57	58		14	11	.09

* O. cloudy; C. clear; F. fair; G. fog; H. hazy; S. smoky; R. rain; T. thund. rain; N. snow. † Indicates trace of rainfall. — Mean for week.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, MARCH 26, 1862.

Cities.	Estimated population for 1860.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scrofula, fever, &c.	Diarrhoeal diseases.	Pneumonia and croup.
New York	1,515,301	872	247	15.48	23.40	2.72	1.44	4.20
Chicago	1,000,000	504	181	15.96	18.11	2.42	1.14	7.79
Phil. (Mich.) 19	1,046,564	397	144	15.00	22.22	3.00	2.60	4.80
Brooklyn	508,343	206	74	12.22	16.78	.36	3.92	4.90
St. Louis	451,770	257	79	16.08	14.96	1.26	—	5.46
Boston	449,477	257	79	16.08	14.96	1.26	—	5.46
Baltimore	424,452	187	57	10.22	12.41	2.19	7.30	7.30
Cincinnati	292,000	109	41	11.36	15.64	.92	.92	5.32
Cleveland	262,000	109	41	11.36	15.64	.92	.92	5.32
New Orleans	242,039	106	32	12.80	20.55	1.19	—	2.76
Pittsburg	240,000	160	52	12.50	17.50	1.19	1.19	13.09
Albany	232,000	87	26	29.63	29.63	—	—	—
Washington	228,262	116	26	8.60	23.08	—	—	2.56
Nashville	76,168	39	16	10.24	25.04	—	—	—
Charleston	65,163	38	8	7.82	10.52	—	—	2.63
Portland	36,425	15	7	13.33	13.33	—	—	—
Westerly	84,513	26	12	12.22	12.22	3.15	6.26	—
Lowell	77,400	26	15	56.93	23.10	—	11.35	—
Fall River	74,398	33	14	18.18	15.15	5.00	7.76	—
Cambridge	70,028	31	10	6.46	6.46	3.23	—	—
Lynn	55,727	29	2	5.00	20.00	4.36	—	—
Lawrence	44,179	24	8	3.33	4.17	—	—	—
Springfield	44,179	14	6	14.29	—	—	—	—
New Bedford	40,703	19	9	5.26	10.52	—	—	—
Salem	30,801	10	3	10.00	—	10.00	—	—
Chelsea	27,309	9	3	33.33	—	—	—	—
Providence	27,412	4	1	—	—	—	—	—
Taunton	22,445	8	3	—	—	12.50	—	—
Gloucester	24,651	15	2	7.69	23.07	—	—	—
Newton	24,379	12	—	8.33	8.33	—	—	8.33
Malden	23,031	5	—	20.00	—	—	—	20.00
Waltham	18,707	3	2	—	—	33.33	—	—
Pitmead	17,281	6	3	—	—	50.00	—	—
Quincy	16,723	2	1	—	—	33.33	—	—
Northampton	14,360	6	2	—	—	33.33	—	—
Worcester port	12,947	2	—	—	—	—	—	—
Medford	11,079	2	—	—	—	50.00	—	—
Hyde Park	10,103	4	2	—	—	25.00	—	—
Peabody	10,158	3	0	—	—	—	—	—

Deaths reported 3,162: under five years of age 1,161; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 427; acute lung diseases 667; consumption 355; diphtheria and croup 174; scarlet fever 74; diarrhoeal diseases 39; typhoid fever 35; measles 21; cerebro-spinal meningitis 21; whooping-cough 21; erysipelas 18; malarial fever 7; puerperal fever 7; typhus fever 7. From typhoid fever Philadelphia 12, New York 4, Cleveland 3, St. Louis 1, Boston 1, Pittsburgh 1, Worcester 1, Lowell 2, Cincinnati, Milwaukee 1, Waukesha 1, Charleston, Cambridge and New Bedford 1 each. From measles New York 9, Brooklyn 3, Philadelphia and Pittsburgh 2 each, Boston and Washington 1 each. From cerebro-spinal meningitis New York 9, Brooklyn 4, Washington 2, Worcester, Fall River, Lynn, Lawrence, Springfield and Gloucester 1 each. From whooping cough Pittsburgh 6, New York 3, Brooklyn 3, Philadelphia and Washington 2 each, Boston, Cleveland and Charleston 1 each. From erysipelas New York 7, Brooklyn 4, St. Louis 3 each, Boston 2, Cleveland, Philadelphia and Washington 1 each. From malarial fever New York 4, Philadelphia 2, Brooklyn 1. From puerperal fever Milwaukee 3, Boston 2, Pittsburgh and Nashville 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 26, 1862, TO APRIL 1, 1862.

The leave of absence granted CAPTAIN MARSHALL W. WOOD, assistant surgeon, U. S. A., is extended one month.

CAPTAIN C. N. B. MACAULAY, assistant surgeon, U. S. A., will report for temporary duty at U. S. Military Academy, West Point, N. Y., during the absence of CAPTAIN HENRY S. KILBOURNE, assistant surgeon, U. S. A., as member of the Army Medical Board, New York City, N. Y., and on return of that officer will rejoin his proper station.

FIRST-LIEUT. FRANK T. MERIWETHER, assistant surgeon, U. S. A., ordered for temporary duty at Madison Barracks, N. Y., during the absence of CAPTAIN HENRY S. TURRILL, assistant surgeon, as member of Army Medical Board, New York City, and on return of that officer will rejoin station.

FIRST-LIEUT FRANCIS A. WINTER, assistant surgeon, U. S. A. (recently appointed) will proceed from St. Louis, Mo., to Jefferson.

erson Barracks, Mo., and report to the commanding officer of that station for duty.

MAJOR JOHN VAN R. HOFF, surgeon, ordered to St. Louis, Mo., to represent the medical department of the army at the meeting of the Association of Surgeons of the National Guard to be held in that city, April 19 to 21, 1892.

The suspension of the operation of Par. 2, S. O. 13, January 16th, A. G. O., relating to CAPTAIN AARON H. APPEL, and FIRST-LIEUT. JULIAN M. CABELL, assistant surgeons, is removed.

Leave of absence for one month, on surgeon's certificate of disability, is granted CAPTAIN EDWIN F. GARDNER, assistant surgeon, U. S. A.

The leave of absence granted CAPTAIN R. W. JOHNSON, assistant surgeon, U. S. A., for seven days, is hereby extended fourteen days.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 2, 1892.

D. O. LEWIS, surgeon, from Naval Hospital, Washington, and to Naval Hospital, Mare Island, Cal.

T. A. BERRYHILL, passed assistant surgeon, from the U. S. S. "Pensacola" and to the U. S. S. "Ranger."

MERRILL W. BARNUM commissioned an assistant surgeon in the Navy from March 15, 1892.

W. G. FARWELL, surgeon, granted leave of absence for six months with permission to leave the United States.

GEORGE W. WOODS, medical inspector, from the U. S. S. "Pensacola" and to the Naval Hospital at Mare Island, Cal.

N. L. BATES, medical director, detached from Naval Hospital, Mare Island, Cal., and ordered home.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDING MARCH 26, 1892.

BAILIACHE, F. H., surgeon. To inspect unserviceable property at Port Townsend, Wash., March 9, 1892. Detailed as member of Board for physical examination, officer Revenue Marine Service. March 26, 1892.

PURVANCE, GEORGE, surgeon. Ordered to Washington for temporary duty. March 5, 1892.

AUSTIN, H. W., surgeon. To inspect Service at New Orleans, Savannah and Charleston, and the Gulf and South Atlantic Quarantine Stations. March 3, 1892.

IRWIN, FAIRFAX, surgeon. Detailed as medical inspector of immigrants, port of Boston, Mass. March 3, 1892.

CARMICHAEL, D. A., passed assistant surgeon. To inspect the San Francisco Quarantine Station. March 7, 1892.

WHITE, J. H., passed assistant surgeon. Ordered to South Atlantic Quarantine for temporary duty. March 26, 1892.

KINNOON, J. J., passed assistant surgeon. To proceed to New York on special duty. March 7, 1892.

FERRY, T. B., passed assistant surgeon. Granted leave of absence for thirty days. March 1 and 14, 1892.

GUTIERAS, G. M., assistant surgeon. Ordered to examination for promotion. March 23, 1892.

BROWN, B. W., assistant surgeon. Assigned to temporary duty at San Francisco Quarantine. March 14, 1892.

EAGER, J. M., assistant surgeon. Granted leave of absence for thirty days. March 1, 1892.

DECKER, C. E., assistant surgeon. Detailed as recorder, Board for physical examination, officer Revenue Marine Service. March 26, 1892.

PROMOTION.

COBB, J. O., passed assistant surgeon. Commissioned by the president as passed assistant surgeon. March 23, 1892.

AMERICAN ACADEMY OF MEDICINE.

PRELIMINARY PROGRAMME.

The following topics are promised for discussion at the Seventeenth Annual Meeting of the American Academy of Medicine, at the Cadillac Hotel, Detroit, Mich., on Saturday, June 4, and Monday, June 6, 1892.

(1) "Essentials and Non-essentials in Medical Education," the Address of the retiring President, Dr. P. S. Conner, of Cincinnati.

(2) "The Value of the General Preparatory Training afforded by the College as compared with the Special Preparatory Work suggested by the Medical School in the Preliminary Education of the Physician," a paper by Dr. T. F. Moses, of Urbana, O.

(3) "Does a Classical Course enable a Student to Shorten the Period of Professional Study?" a paper by Dr. V. C. Vaughan, of Ann Arbor, Mich.

(4) "The Value of a Collegiate Degree as an Evidence of Fitness for the Study of Medicine," a paper by Dr. L. H. Menter, of Chicago.

(5) "The Value of Academical Training Preparatory to the Study of Medicine," a symposium by Drs. H. B. Atlys, of Philadelphia, W. D. Bidwell, of Washington, and Elbert Wing, of Chicago.

(6) "The Newer Medical Education in the United States," a symposium by Drs. W. J. Herdman, of Ann Arbor, Charles Jewett, of Brooklyn, and Elbert Wing, of Chicago.

(7) "The Newer Basis of State Supervision of the Practice of Medicine," by Peter H. Millard, of St. Paul.

Some other papers are partially prepared and the usual reports may be expected from the committees.

Members of the profession are cordially invited to be present at the sessions of the Academy.

ANNUAL MEETING OF THE ASSOCIATION OF MILITARY SURGEONS OF THE NATIONAL GUARD OF THE UNITED STATES.

The second annual meeting of the Association of Military Surgeons of the National Guard of the United States, will be held in St. Louis, Mo., April 19, 20, and 21, 1892.

The railroads have granted one and a third rates. Papers will be read and discussed by regular Army and Navy, and Guard medical officers.

For any information as to meeting, etc., address,

COL. E. CHANCELLOR, 515 Olive Street, St. Louis, Mo.
Surg.-Gen. N. SENN, W. N. G. President.
Lieut. and Asst. Surg. RALPH CHANDLER, Corres. Sec'y.

DELEGATES TO AMERICAN MEDICAL ASSOCIATION.

Members of the Mississippi Valley Medical Association wishing to go as delegates to the American Medical Association at Detroit, will please send names to

DR. E. S. MCKEE, Secretary, 57 W. 7th Street, Cincinnati.

SOCIETY NOTICES.

SURGICAL SECTION OF THE BUFFALO DISTRICT MEDICAL SOCIETY. — There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, May 4, 1892, at 8 o'clock.

DR. S. J. MIXTER, "Median Abdominal Section for Removal of Tumor of the Kidney; Recovery."

DR. H. W. CUSHING, "A Case of Nephrectomy; Recovery."

DR. JOHN L. MORSE, "Tracheotomy with Delayed Removal of the Tube."

DR. C. L. SCUDER, "Diphtheria; Tracheotomy, Caretting the Trachea; Recovery."

CHARLES L. SCUDER, M.D., Secretary, 94 Charles Street.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, May 1, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock p.m.

DR. S. J. MIXTER, "Aneurism of External Iliac, Laparotomy and Ligation of Common Iliac; Death."

DR. J. B. AYER, "Recuporative Power in Advanced Age."

DR. F. H. WILLIAMS, "Early Local Treatment in Diphtheria." Election of new members.

G. G. SEARS, M.D., Secretary.

ERRATUM.

On page 316, Vol. CXCVI, twenty-fifth line from the bottom, first column, for *faculty* read *fraternity*.

RECENT DEATHS.

SIR WILLIAM BOWMAN, Bart., M.D., consulting surgeon to the Royal London Ophthalmic Hospital, died in London, March 20th, aged seventy-five years. He was the author of several works on the eye. He received the honorary degree of M.D. from Dublin University in 1857, of LL.D. from Cambridge in 1880, and Edinburgh in 1881. He was made a baronet in 1884. He was first president of the Ophthalmological Society of the United Kingdom, and was an honorary member of many foreign societies.

BOOKS AND PAMPHLETS RECEIVED.

Announcement of the Twenty-ninth Annual Course of Lectures of the Medical Department of the University of California, with Catalogue of Students and Graduates. 1892.

Original Articles.

NITRITES: THEIR THERAPEUTIC ACTION AND SCOPE IN MEDICAL PRACTICE.

BY KENELM WINSLOW, M.D., NEWTON, MASS.

THE comparatively recent introduction of the nitrites as therapeutic agencies, and their growing popularity, may serve as an excuse for presenting a paper, the object of which is to point out briefly the value of the nitrites, more especially nitro-glycerine, in certain affections in which they have proved serviceable and to show the rationale of their curative effect in each instance.

The writer must, however, first acknowledge his indebtedness to the following gentlemen for their kindness in assisting him by communications with reference to their experience with nitro-glycerine in practice, doses employed, method of using and views as to its action in the various diseases in which they had employed it, namely, Drs. Francis P. Kinnicutt and H. B. Millard, of New York; Drs. Weir Mitchell, H. C. Wood and Hobart Amory Hare, of Philadelphia; Drs. Robert T. Edes, Francis Minot, Frederick L. Knight, H. F. Vickery and Vincent Y. Bowditch, of Boston, and to Dr. Mary Putnam Jacobi, of New York.

The preparations in common use representing the nitrite group are spirits aetheris, nitro-, potassii nitras, sodii nitris, amyl nitris and nitro-glycerine.

Spirits of nitre, although a useful preparation as a stimulant, diaphoretic and diuretic, is often useless as a nitrite. The United States Pharmacopoeia article should contain four per cent. of ethyl nitrite, but it is said authoritatively that the official process called for in making it will only produce a preparation containing three per cent. of ethyl nitrite at best.

In a report¹ containing the result of recent analyses of 68 samples of nitrous ether; seven contained mere traces of ethyl nitrite, 47 were so far below the standard as to be valueless, and there was so much difference between the strongest and the weakest that a teaspoonful of the former was equivalent to a pint of the latter. Frequent exposure to the air, preservation in warm places and errors in preparation explain, for the most part, these deficiencies.

It is doubtful how far the therapeutic effect of nitrate of potash depends upon its action as one of the nitrite group. As a cardiac sedative, renal stimulant and diuretic it does not differ much from the other salts of potassium. When burned, in the form of nitre paper, its fumes contain the nitrite of potassium, which consequently represents the action of this class. In the blood it is uncertain whether it acts as a nitrate or not. Therefore nitre cannot be looked upon as a satisfactory representative of the nitrites.

Nitrite of sodium is not distinguishable from the other nitrites in action except that it is slower, more permanent and not so reliable in its effect on the economy.

Nitrite of amyl and nitro-glycerine are similar in kind of action, but differ in degree. Whereas the action of the first in diminishing vascular tension is observed by means of the sphygmograph² to occur within one minute and to last for two to four minutes, with variations from ten to thirty minutes, the action of the second is indicated within six to seven minutes,

is most marked for half an hour, and sometimes an hour longer, although varying somewhat with different people. Anemic persons, or those with weak circulation, may be affected much more easily and for a longer time. Good nitrous ether lowers tension for from forty-five to sixty minutes.

This gives a comparative idea of the duration of action of these representatives of the nitrites. It will be noted, from what has gone before, that nitrite of amyl or nitro-glycerine are the most reliable preparations, and the latter the more permanent of the two.

Without digressing too much to speak of the physical and chemical properties of nitro-glycerine, we may say that it is a nitrate of glycerol, also called glenoine. Its formula is $C_3H_5(NO_3)_3$. It is decomposed by the alkaline blood and two-thirds of its nitric acid is reduced to nitrous acid, and with the alkali forms a nitrite of potassium or sodium, while the remaining third is not reduced and forms a nitrate in the blood. Nitro-glycerine is more powerful than the other nitrites because it is absorbed undecomposed, setting free nascent nitrous acid in the blood. The one per cent. alcoholic solution is the preparation usually employed and as strong a solution as ten per cent. is safe as far as any danger of explosion is concerned. It has been perhaps wisely suggested that in writing prescriptions the synonym glenoine be used, it not having so formidable or suggestive a sound as nitro-glycerine to patients, indicative of violent disturbing consequences.

The action of nitro-glycerine will be taken as a type. Gienoine dilates the arterioles all over the body by relaxing the walls of the vessels. This action is no doubt peripheral, but whether due to impression on the vaso-motor ganglia or muscular fibres is uncertain. The heart beats more quickly in consequence, as the vascular resistance is lessened and because a diminished blood-pressure depresses the vagus centre and often stimulates the accelerator centres. The arterioles being dilated in the heart as elsewhere, increase its blood-supply, nutrition and force. Nitro-glycerine is more of a vasodilator than a cardiac stimulant, that is, it increases the rapidity of the blood-current by dilating the vessels rather than by increasing the motive force *a tergo*. There is much evidence for believing, however, that in small doses nitro-glycerine usually stimulates the heart. It is shown to some degree physiologically and also clinically, and it would seem as if this action had not been duly appreciated until recently. It is now claimed that nitro-glycerine is better than alcohol in all emergencies, as it acts with much more rapidity, is tasteless, the dose is infinitesimal, and it may be dropped on the tongue and absorbed when swallowing is impossible during unconsciousness. It is also asserted that one minim of glenoine is equivalent to an ounce of brandy.

Lauder-Bruntton has found that the general blood-pressure is raised by small doses of nitrite of amyl notwithstanding the vascular dilatation; and Dr. Robert T. Edes writes me that, "There seems to be good reason to suppose that nitro-glycerine also stimulates the heart directly, that is, quickens the pulse by its action on the cardiac ganglia, as well as simply taking off blood-pressure." Digitalis and nitro-glycerine are said to be antagonistic in all respects, save that they both increase the force of the heart.³ Digitalis slows the heart and increases blood-tension; nitro-glycerine accelerates it and diminishes blood-pressure.

¹ Druggists Circular, August, 1891.

² D. J. Leech, M.D.: British Medical Journal, November 28, 1885.

³ J. B. Burroughs, M.D.: London Lancet, June 22, 1884.

Digitalis is therefore indicated in the case of a rapid heart which is weak from the lack of rest periods; nitro-glycerine is to be used with a slow heart where the diastole is too prolonged and weakness occurs, not from too little rest, but, on the other hand, from stagnation of the blood-current. So that digitalis is particularly applicable with a frequent pulse of low tension, nitro-glycerine with an infrequent pulse of high tension.

In either case the abnormal pulse is caused to become nearer the normal state in character and frequency. Where frequency, however, is due to weakness of innervation, nitro-glycerine, like alcohol or other stimulants, may not increase but rather diminish rapidity of the cardiac pulsations.

Nervous System. — Nitro-glycerine lessens reflex action by its influence on the spinal cord. It depresses especially the motor centres, and to a less degree the activity of the motor nerves.

Muscles. — Gleoine lowers the functional activity of muscular tissue in large doses, and nitrite of amyl locally applied to the muscles of a frog causes them soon to lose their power of contractility and to become paralyzed. Nitrates relieve spasm of muscular tissue wherever it occurs, owing to their depressing action on motor nerves and muscular tissue.

Blood. — In poisoning by nitro-glycerine, and nitrates generally, the oxidizing function of the blood is interfered with and hæmic respiration is diminished by the conversion of the oxy-hemoglobin into meth-hemoglobin. This latter is not so readily de-oxidized but still yields up its oxygen to reducing agents, so that it has been suggested that when the venosity of the blood becomes great, lethal poisoning is prevented by the unoxidized products of tissue waste becoming reducing agents and again restoring internal respiration.

Urine. — Nitro-glycerine augments the amount of urine, increasing the local blood-pressure within the glomeruli by dilating the afferent vessels of the renal artery which supply them.

THERAPEUTICS IN DISEASES OF THE RESPIRATORY ORGANS.

Nitro-glycerine has proven very efficacious in the treatment of acute lobar pneumonia. The theory of its action is based upon its power of dilating arterioles generally and thus relieving the load put upon the right heart due to the pulmonary obstruction. In this way dyspnoea may be averted. The result is somewhat similar to that of venesection without its weakening effect. It is "bleeding a patient into his own blood-vessels." How much of a stimulating effect on the heart nitro-glycerine has, it is difficult to say, but I have certainly not known of its depressing the heart in these cases. It may be used to advantage in combination with such agents as alcohol, ammonia, strychnine or atropine.

Dr. Andrew H. Smith⁴ says: "Again and again I have seen a patient with pneumonia somnolent or even comatose, with face gray, the lips livid, respiration superficial and fifty to sixty per minute, and the chest everywhere full of moist riles; but nevertheless rescued from this apparently hopeless condition by minims doses of a one per cent. solution of nitro-glycerine administered every fifteen or thirty minutes." Dr. Frederic I. Knight, of Boston, writes me that he has

often seen relief of dyspnoea in acute pneumonia from the use of nitro-glycerine.

Prof. T. R. Frazer⁵ has given a practical demonstration of the therapeutic action of nitro-glycerine in chronic bronchitis. It was a case of four months' duration, with snoring, whistling and cooing riles heard all over the chest. One minim of the one per cent. solution of nitro-glycerine caused the riles to immediately disappear, showing that the physical signs could not have been due to either congestion or exudation within the bronchial tubes, for this agent could have diminished neither; but had been the result of spasm.

An asthmatic patient, under my care, subject to repeated attacks of acute bronchitis, was more relieved by nitro-glycerine than by any other single remedy after the pharmacopeal resources had been wellnigh exhausted. This was an old hospital patient who had long been the object of some such treatment as was pursued by a sea captain, who came to a friend of mine for consultation.⁶ A nautical prescriber was at a loss as to what he ~~should~~ do, for having begun treatment in the northeast corner of his medicine chest, and having tried every remedy in turn with a praiseworthy lack of therapeutic prejudice, he had conscientiously worked around into the southwest corner of said chest, declaring with justifiable astonishment, he could detect no change in his patient notwithstanding.

The acute attacks in my case were followed usually by asthmatic seizures, which lasted for a considerable period. Therefore it is not improbable that the spasmodic element existed during the bronchitis, and the useful effect of nitro-glycerine was thus more apparent, although its action in equalizing the circulation may have been an important factor beside. One minim of the centesimal solution of gleoine, administered in three doses at intervals of fifteen minutes, effectively cut short the asthmatic attacks, although in another case it had to be discontinued on account of the fulness in the head it produced.

Asthma is very commonly treated successfully with nitro-glycerine or nitrite of amyl by inhalation.

Dr. Hobart Amory Hare was kind enough to write as follows: "I have found nitro-glycerine very useful in the treatment of asthma, and have never seen any untoward effects produced by it in this disease, while I have found nitrite of amyl to be of value when used for the purpose of stopping an attack. I have seen one or two instances in which serious cardiac embarrassment seemed to be produced by it, and I believe, under the circumstances, the heart was already so distended with blood that the action of nitrite of amyl simply increased the cardiac difficulty. How drugs do good in asthma is a matter which is not positively decided. Their depressing effect on the nervous system, combined with the vaso-motor changes which they produce, probably explain their beneficial influence."

Dr. Hare's explanation refers to the relief of spasm and equalization of the circulation.

The writer in his service in the Carney Hospital, as interne, where there is always a large number of phthisical patients, observed that minims doses of nitro-glycerine gave more relief in the dyspnoea of advanced cases than alcoholic stimulants or any other one remedy. Nitro-glycerine may accomplish this by acting as a cardiac as well as a vascular stimulant. In emphysema with dilatation of the right heart and venous engorgement owing to pulmonary obstruction, ni-

⁴ American Journal of Medical Sciences, November, 1890.

⁵ London Lancet, July 9, 1887.

tro-glycerine is likewise useful, and cases could be cited where it has been employed with considerable benefit.

In acute pulmonary oedema nitro-glycerine acts favorably, especially as a vascular stimulant, thus distributing the blood more freely about the body, and relieving the right heart. Dr. A. Alexander Smith⁶ relies upon nitro-glycerine ($\frac{1}{10}$ gr.) given every two hours with strychnine ($\frac{1}{10}$ gr.) subcutaneously. In addition to this, he uses two doses of atropine ($\frac{1}{10}$ gr.) two hours apart at the outset, as respiratory and cardiac stimulants. Nitro-glycerine is recommended by Ringer for hiccup, and by Bartholow for whooping-cough and laryngismus stridulus.

The antispasmodic action of the nitrites would account for any beneficial effect occurring in its use in the treatment of these maladies.

Cardiac Affections.—It is needless to dwell on the usefulness of nitro-glycerine in the treatment of angina.

I am indebted to Dr. Francis Minot, of Boston, for the following communication to me on this subject. He writes: "I think nitro-glycerine is more efficient in angina than nitrite of amyl. I give nitro-glycerine in doses of from one to four drops of the one per cent. solution, repeating it when required. I have never found any injurious effects from it, even when continued for months. It succeeds better than any remedy I have ever employed in angina and orthopnoea from cardiac disease."

Dr. Francis P. Kinnicutt, of New York, in reply to my queries on the subject, tells me he relies largely on nitro-glycerine in the treatment of arterio-sclerosis, with or without renal complications, and that it is especially useful in the mental hebetude accompanying this affection. He gives six to eight doses of one minim each during the twenty-four hours, for long periods.

In the angio-neuroses generally, particularly where there is an irregular distribution of the blood, with pallor of the skin and mucous membranes, or with small rigid arteries, it is indicated (as in migraine), but is to be avoided when the face is congested.

In all these cases the relief of spasm and equalization of the circulation is the true explanation of the effect of nitro-glycerine.

In almost every instance where severe dyspnoea or orthopnoea occurs during cardiac disease I believe nitro-glycerine stands at the head of therapeutic agencies in affording relief. Where there is loss of compensation and passive congestion of the internal organs, it takes the load off the heart and aids in distributing the blood about the body in its proper channels.

The writer has had a case with cardiac disease where the orthopnoea was so great that the patient had not been able to lie down for weeks for a minute at a time, yet was made absolutely comfortable, in this respect, by minim doses of nitro-glycerine given at four-hour intervals. In the interim digitalis or strophanthus was used.

Although digitalis antagonizes to some extent the effect of nitro-glycerine on the vessels, they both stimulate the heart and the combination has been employed with apparent benefit where the pulse was frequent and irregular in heart lesions with dyspnoea. Alcoholic and ammoniacal preparations, atropine and strichnia are not open to the same objection, and therefore are more appropriate as heart stimulants.

* New York Medical Record, December 19, 1891.

It has been urged that in aortic regurgitation the prolonged diastole produced by digitalis militates against its use, by allowing more blood to leak back again into the ventricle during the long rest period than is pumped out by the more complete and forcible contraction under digitalis. Here the cardiac stimulants just mentioned, together with strophanthus, may be employed with advantage as is illustrated by a case reported by S. Solis Cohen.⁷

It has always been found advisable as a precaution, to have nitro-glycerine at hand in cardiac cases, even if not regularly in use, to avert attacks of dyspnoea or angina. The writer has a case in mind with aortic stenosis and good compensation usually, but where syncope often occurred on exertion. These attacks were completely relieved by nitro-glycerine. As a heart stimulant, pure and simple, apart from its power to increase the vascular flow by dilatation of the arterioles, nitro-glycerine is more potent than is generally held. It is a substitute for alcohol, although much more rapid and transient in its effect. It is doubtful whether subcutaneous administration is more speedy in its effects than when given by the mouth.

In typhoid, complicated with bronchitis or pneumonia, it has been employed with good results as a stimulant and to alleviate dyspnoea. It is recommended in collapse.

In poisoning by various agents there is undeniable evidence of its life-saving properties on record. In chloroform narcosis, it stimulates the heart and dilates the cerebral vessels. In the syncope and collapse following cocaine poisoning it speedily aids recovery through its cardiac and vascular stimulating powers.⁸

Following toxic doses of opium, nitro-glycerine has been used successfully to stimulate the heart, where the respiration was sustained, and other cardiac stimulants had proved of no avail.⁹ Nitro-glycerine has also proved efficacious in poisoning by illuminating gas, probably stimulating the heart and countering the effect of the gas on the vagus centres.

Renal Diseases.—Nitro-glycerine reduces arterial tension and relieves headache, dyspnoea and convulsions of uremic conditions in chronic Bright's disease. Not only this, but it increases the amount of urine and diminishes correspondingly the quantity of albumen.

The uremic symptoms usually depend upon, or are at any rate associated with, increased arterial tension, and relief follows lowering of blood pressure by nitro-glycerine. It is useful in interstitial as well as chronic parenchymatous nephritis. Dr. Kinnicutt advises beginning with one two-hundredth of a grain of nitro-glycerine in alcoholic solution, to test the patient's susceptibility, and then, if it is well borne, continuing it in one-minim doses of the one per cent. solution each hour till relief of uremic symptoms occurs or inefficiency of the treatment is demonstrated.

In urgent cases of renal dyspnoea of uremia it may be given in one-minim doses at intervals of fifteen minutes for two or three times and afterward at one-half-hour intervals. Then, to avert critical attacks, maintain lowered blood-tension and prolong life, it may be employed for years in one-minim doses from four to six times daily.

Dr. Kinnicutt points out that it increases the amount of urine notwithstanding it diminishes general blood-

⁷ Philadelphia Hospital Records, vol. 1, 1890.

⁸ Central. f. d. gesammte Therap. Schilling, February, 1886.

⁹ I. Burroughs, M.D. London Lancet, June 29, 1890.

pressure. Dr. H. B. Millard, in his work on Bright's disease, shows that according to the experiments of Goll, Stokvis and Overbeck¹⁰, increased secretion of urine follows *pari passu* an increase of blood-tension, whereas the quantity of albumen depends upon rapidity of the blood-current. Diminished rapidity favors albuminuria. As nitro-glycerine stimulates the heart and dilates the vessels, it is easily seen how increased rapidity of vascular flow is brought about, but it is not so clear how the blood-pressure is heightened. Dr. Millard advances the theory that there is a local vaso-motor spasm which is relieved, or that the renal ganglia are stimulated.

Brunton¹¹ believes that the local pressure in the malpighian glomeruli is increased physiologically by nitrates through their action in dilating the afferent branches of the renal artery supplying the malpighian tufts. This theory would reconcile the apparent anomaly of a drug, which generally lowers blood-pressure, increasing the quantity of urine. On the other hand, Dr. Millard reports a case of polyuria, with a hard and tense pulse, passing daily, for three weeks, twenty-four quarts of urine. The sulphate of iron (gr. iii, t. i. d.) brought about a reduction of this quantity to twelve quarts. Subsequently the use of gencloine (one minim of the centesimal solution four times daily) was followed by a diminution of the amount to six quarts per diem. This result may have been due to the fact that lessening of the general tension was the more important factor in the case than increase of local tension, but the therapeutic rationale in such conditions must still be considered *sub judice*.

Dr. J. H. Burroughs¹² thinks benefit is derived from the use of nitro-glycerine in acute nephritis, by its relieving renal congestion in dilating vessels elsewhere. He relates the history of a case where there was coma, with feeble pulse of 100, becoming a mere thread, which was given one-minim doses of nitro-glycerine every fifteen minutes for one hour and then every hour for four hours. The pulse was at this latter period 100, but full, the skin dripping and the kidneys had secreted a pint of urine.

I may be permitted in closing this section to append two extracts from letters kindly sent me relative to the matter in hand.

Dr. Francis P. Kinnicutt, of New York, writes that, "In all cases of renal disease, with high arterial tension, and also in other diseases where this condition has obtained, I have been convinced by a rather large clinical experience, both in hospital and private practice, that the effect of nitro-glycerine in ameliorating this condition is more positive than that obtained by other means."

Dr. Mary Putnam Jacobi, of New York, says, "I use nitro-glycerine in renal cirrhosis or in the high tension pulse of lithæmia, without demonstrable renal lesion, and with great benefit as to the various symptoms accompanying the condition."

Nervous Affections.—Epilepsy is one of the maladies more commonly treated with nitrates.

Dr. H. A. Hale, in his communication to the writer on the subject, says, "Nitrite of amyl whenever used has proved itself invaluable in the prevention of epileptic attacks which were preceded by a sufficiently prolonged aura to permit the patient using the drug."

¹⁰ Vide Charcot: *Leçons sur l'Albuminurie*.

¹¹ Practitioner, vol. xxii, April and May, 1884.

¹² Ibid.

Dr. Mary Putnam Jacobi writes me, "According to Crichton Browne's suggestion in averting an approaching epileptic attack, I consider the nitrite of amyl invaluable and order patients liable to epileptic fits to always have the drug in readiness. In my cases, where the disease was not invertebrate, I have seen the attacks greatly diminished in frequency by its use."

Osler¹³ has found only a temporary improvement in most cases where nitrite of amyl was used continuously as an ameliorating agent. He recommends five minims t. i. d., increasing the dose up to eight minims where bromides fail.

The writer's experience has been very limited in this field and not particularly favorable in the use of nitrates as prophylactic agents in epilepsy, as his cases have been apparently "invertebrate" ones. The nitrite of amyl is a better preparation for use as a prophylactic agent, given in the form of five-minim glass capsules; to be broken in the handkerchief and inhaled as soon as a premonition of the attack is perceived. It acts favorably in counteracting vaso-motor spasm of the cerebral vessels which is supposed to occur in the seizures.

Migraine, which is accompanied by a somewhat similar pathological condition, may be benefited by nitro-glycerine, especially where the face is pale.

Dr. H. F. Vickery, of Boston, writes me he has stopped a sick-headache with vomiting immediately, by inhalation of nitrite of amyl and also states that a dose of nitro-glycerine, once repeated, cured a case of violent intercostal neuralgia. He believes that nitro-glycerine has a certain sedative effect on the sensory nerves, in curing neuralgia, apart from its action in relieving spasms and in dilating vessels. It has been recommended by Bartholow in gastralgia for the same reason and also in hepatic colic, reflex vomiting and tetanus, for its power in combating spasmoid conditions. Ringer speaks of its value in sea-sickness.

The nitrates are serviceable in spasmoid dysmenorrhœa. F. W. Kindle¹⁴ advises the use of nitro-glycerine in dysmenorrhœa and the sickness of pregnancy, and reports a case of severe after-pains with a firmly contracted uterus and no clots, cured as if by magic. Hiccough is another spasmoid affection in which nitro-glycerine is remedial. The cold stage of ague, in which there is a vaso-motor spasm of the peripheral vessels, is relieved by nitrates.

We may summarize the therapeutical indications for the employment of nitrates as follows: (1) To dilate the peripheral arterioles and equalize the circulation in internal congestions; (2) To stimulate the heart; (3) To relieve spasm of vascular, nervous or muscular origin; (4) To increase the quantity of urine and diminish the amount of albumen; (5) Possibly to relieve pain.

POISONING BY NITRITES.

Many interesting cases, which practically represent the effects of toxic doses of nitro-glycerine, have been reported by Thomas Darlington, M.D.¹⁵. They occurred in workmen overcome by dynamite fumes (volatilized nitro-glycerine) during the construction of the Croton aqueduct. The symptoms presented were: flushing of the face, succeeded by pallor, nausea and

¹³ American Journal of Nervous and Mental Diseases, vol. xii, No. 1.

¹⁴ London Lancet, March 19, 1887.

¹⁵ New York Medical Record, p. 681, 1890.

frequently vomiting, trembling sensations, throbbing of the temples, fulness of the head, as if it would burst, followed by intense headache persisting for twenty-four hours. The heart's action was increased and the pulse was full, round and compressible. None of the cases were fatal. The treatment consisted of cold applied to the head, ergotin and atropine subcutaneously, inhalations of ammonia and spirits of aromatic ammonia by mouth. Intense headache is sometimes produced in patients by nitro-glycerine in ordinary doses and precludes its use. Such an unfortunate result cannot be predetermined, as far as we know, although it is more likely to occur in cases treated for dysmenorrhea.

Dr. H. F. Vickery reports to the writer a case where nitro-glycerine ($\text{gr. } \frac{1}{10}$) given by mouth to an adult caused within a minute the most frightful dyspnea, pallor and cold extremities. There could be felt no radial pulsations. Alcoholic stimulation gave speedy relief. This exemplifies the rather common occurrence that the toxic effect of many drugs is opposed diametrically to their physiological action in medicinal doses. The depressing effect of overdoses of the nitrites on the heart, together with their paralyzing action on the red blood-corpuscles, interfering with the normal hemic respiration, leads to syncope, dyspnea and collapse.

Dr. Kolipinski¹⁰ reports a case where a delicate woman took two drachms of the centesimal solution of nitro-glycerine. She became semi-conscious, her extremities were cold, face pale, she had gastric distress and vomited. Her pulse was strong and regular. She made a good recovery, the only treatment being a mustard foot-bath. The treatment consists in stimulating the heart and respiration and in contracting the blood-vessels. Alcoholic or ammoniacal stimulants may be used and ergotin, atropin and strychnine injected subcutaneously together with cold applications to the head.

Although symptoms of poisoning have been many times reported following the administration of ordinary therapeutic doses of the nitrites, we have yet to learn of any case proving fatal.

NOTES ON TYPHOID FROM 676 CASES ADMITTED TO THE BOSTON CITY HOSPITAL IN 1890 AND 1891.¹¹

BY A. L. MASON, M.D.

(Concluded from No. 14, page 332.)

TABLE I.
COMPLICATING CAUSES OF DEATH.

	Recovered.	Died.	Total.
Phthisis	4	3	7
Pneumonia	28	6	34
Pleurisy	8	3	11
Bronchitis (severe)	72	2	74
Edema of lungs	15	10	25
Nephritis	45	15	60
Cardiac	11	4	15
Parotitis	1	1	2
Pregnancy	5	2	7
Phlegmasia	15	4	19
Perforations	9	9	18
Intracranial hemorrhages	18	14	32
Delirious tremens	3	5	8

¹ Read before the Boston Society for Medical Improvement, January 25, 1891.

¹⁰ Philadelphia Medical Times, p. 340, 1890.

TABLE II.
OCCASIONAL COMPLICATIONS AND SEQUELS (NON-FATAL).

	Cases.	Cases.	
Abscess	3	Orchitis	1
Acute rheumatism	1	Otitis purulenta	22
Carbuncle	3	Peri-ovitic cellulitis	1
Diphtheria	3	Periorbititis	2
Empyema	2	Perityphlitis	1
Epididymitis	2	Purpura	1
Erysipelas	3	Scarlet fever	1
Furunculosis	2	Tonsillitis	7
Insanity	2	Tubercular peritonitis	1
Jaundice	1	Ulcer of leg	1
Neuritis	21		

CASES NOT AMENABLE TO TREATMENT.

In estimating the probable effects of treatment certain classes of cases may be excluded as having little bearing upon the question of therapeutics. Such cases are moribund at entrance; cases of intestinal perforation and hemorrhage, and those fatal through delirium tremens, phthisis, chronic Bright's disease, chronic endocarditis or syphilis. Pregnancy must also be included as exposing females to an additional danger.

Therefore I have tabulated the following fatal cases on which the treatment would have had little influence, namely :

Moribund at entrance	15
Perforations of bowel (9)	7
Intestinal hemorrhage (34)	13 ^a
Phthisis	3
Chronic nephritis	2
Endocarditis (chronic)	2
Endocarditis with pneumonia	1
Pregnancy with pneumonia	1
Abortion with septicemia and perforation	1
Delirious tremens	2
Delirium tremens with intestinal hemorrhage	2
Delirium tremens with chronic Bright's	1
Total	56

The case of abortion with perforation and two cases of delirium tremens with hemorrhage are entered twice. This leaves us 23 fatal cases in which the acute renal, circulatory and respiratory disturbances, diarrhea and other conditions were probably due to pyrexial exhaustion. Of these, however, four had lobular pneumonia, of whom two entered on the fifth day of the fever and died on the eleventh and twelfth days, respectively. The pregnant woman with pneumonia, alluded to above, is not included. She entered on the fourth day and died on the eleventh day of the typhoid, in the sixth month of pregnancy.

One case only of fatal lobular pneumonia is recorded. He entered on the fourteenth and died on the thirty-fifth day. This complication is usually a late one.

One case died as mentioned above with acute aortic endocarditis, one with acute pleuritis, pericarditis and nephritis, and one with parotitis; and after defervescence, two from embolism of the pulmonary artery, and two from extensive thrombosis of the iliac and femoral veins.

The 15 autopsies are entered below. They were performed by Dr. Gannett and Dr. Mallory.

AUTOPSIES.

Perforations (5).

CASE 1. Man, thirty-three. Entered on 7th day. Died on 21st. Perforation one-third inch in diameter at junction of cecum and ileum. Another, ten inches further up ileum, one and one-half inch long and one-

^a Two cases had perforation, and one had fatal hemorrhage soon after entrance, and are included among the moribund.

half inch in diameter apparently confined to a Peyer's patch. Typhoidal enteritis. Acute fibrinous peritonitis.

CASE II. Man, nineteen. Entered on 21st day. Died on 27th. Perforation of ileum a little above ileo-caecal valve. Typhoidal ulceration of two or three Peyer's patches in ileum. Acute fibrinous peritonitis.

CASE III. Female, twenty-nine. Entered on 29th day. Died on 54th. Perforation in cecum corresponding to ulcer on mucous surface. Fifteen to twenty typhoid ulcers in cecum and a few in lower ileum. Acute peritonitis.

CASE IV. Female, twenty-six. Entered on 8th day. Died in relapse on 42d day. Perforation through Peyer's patch in lower ileum. Few typhoid ulcers in colon and lower part of ileum. Acute general peritonitis. Acute fibrinous pleurisy. Cloudy swelling of kidneys. Chronic mitral endocarditis with stenosis and insufficiency.

CASE V. Man, fifty-three. Entered on 28th day. Died on 31st. Perforation two and one-half feet above cæcum, large enough to admit lead pencil. Typhoidal ulceration of Peyer's patches. Acute purulent peritonitis.

Hemorrhages (4).

CASE I. Female, twenty-one. Entered on 7th day. Died on 19th. Large intestine full of dark fluid blood. Typhoidal enteritis. Acute aortic endocarditis.

CASE II. Man, twenty-four. Entered on 14th day. Died on 32d. Partly digested blood throughout small and large intestines. Typhoidal ulceration of Peyer's patches in lower ileum and in colon. Cloudy swelling of liver and mesenteric glands. Edema of lungs.

CASE III. Male, twenty-five. Entered on 8th day. Died on 18th. Typhoid ulcerations in lower three feet of ileum. Granular degeneration of liver and kidneys. Emphysema of lungs.

CASE IV. Male, nineteen. No history. Typhoidal enteritis. Haemorrhagic infarction of spleen.

Pneumonia (3).

CASE I. Male. Acute fibrinous pneumonia at both bases. Typhoid ulcerations in lower ileum.

CASE II. Female, twenty-five. Entered on 5th day. Died on 12th. Acute pneumonia. Acute fibrinous pleurisy. Granular degeneration of kidneys and liver. Typhoid ulcerations in first four feet above cæcum.

CASE III. Male, twenty. Entered on 6th day. Died on 21st. Acute fibrinous pericarditis. Acute fibrinous pleurisy. Acute parenchymatous nephritis. Hypostatic pneumonia. Cloudy swelling of heart and liver. Typhoidal enteritis.

Pulmonary Embolism (2).

CASE I. Male. No history. Embolism of pulmonary arteries. Haemorrhagic infarction of lung. Thrombosis of common iliac and internal iliac veins. Acute septic pleurisy. A nodule of septic necrosis of spleen with extension through diaphragm. Cloudy swelling of heart and kidneys. Injection of vessels of brain. Typhoid ulcerations in lower ileum.

CASE II. Male, twenty-eight. Entered on 16th day. Died on 43d. Embolism of pulmonary artery. Thrombosis of right external iliac and both femoral veins. Injection of lungs, kidneys and liver. Typhoid ulcerations in lower six inches of ileum.

Exhaustion and Pyrexia (1).

CASE I. Female, twenty-one. Entered on 5th day.

Died on 11th. Cloudy swelling of heart, kidneys and liver. Typhoidal ulcerations in colon and lower ileum.

THERAPEUTICS.

Brand had collected, two years ago, 20,000 cases of typhoid fever treated by his plan, chiefly in Germany and in Lyons, with a mortality of about 7.5%. Most of the physicians who had tried it reported a considerably lower death-rate, this sometimes falling, in small series of cases and under favorable circumstances, to two or three per cent., or even to zero. It is to be noticed, however, that such results usually came from hospitals where many children and young persons were treated, and from the army hospitals in Germany where healthy young soldiers compose the material. Under these conditions many of the causes of a high mortality are eliminated.

In Paris, last year a committee was appointed to report to the Société Médicale des Hôpitaux as to the mortality from typhoid fever in the Paris hospitals and the influence of treatment. This report⁹ was on the whole favorable to Brand's method. It shows that under various modes of treatment, chiefly expectant, the mortality from 1866 to 1881 was 21.5%. From 1882 to 1888 it was 14.1%; in 1889, 13.5%.

Twenty-one reports from various *chefs de service* show 916 cases with 114 deaths, 12.44%, under different kinds of treatment.

In 1888 and 1889, 1,063 cases treated symptomatically showed 133 deaths, 12.51%; whereas, in 323 cases treated by baths, 32 died, or 9.9%.

Jaccoud, with the use of tonics, cold lotions and antipyretics, lost in sixteen years, 71 cases out of 655, or 10.8%.

Bouchard at the Hôpital Lariboisière, since 1884, with baths gradually cooled, intestinal antisepsis, quinine, etc., had a mortality of 11.16% in 421 cases, instead of 21% as before.

In this country, since the cases of Drs. Edes and Stedman at the City Hospital, reported about fifteen years ago, the system of Brand has not been brought before the profession in a practical manner until recently, when Dr. James C. Wilson, in Philadelphia, Dr. Baruch, in New York, and other physicians have reported a few cases. Dr. Wilson, at the German Hospital in Philadelphia, treated 66 cases without a death.

Under the use of prolonged tepid baths, Riess, in 900 cases, had a mortality of 7% to 8%; and under simple expectancy with four or five litres of drinking water daily, Debove, at the Hôpital Andral, of 9.2%.

Dr. James Barr, of Liverpool, England, reports¹⁰ twelve cases of severe typhoid treated successfully by prolonged immersion in a tank filled with water at a temperature of 90° to 98° F. Patients were kept in the tank constantly for periods varying from six to thirty-one days. The inconveniences of such a method are obvious but the results appear to have been very good.

At the City Hospital latterly cold sponging and affusions have been applied very thoroughly, at frequent intervals day and night if necessary, the water being cooled with ice during the warmer months and sponging of the whole surface being continued long enough to lower the temperature materially. As 100 typhoids, more or less, are in the wards for many

⁹ Gazette Médicale des Hôpitaux, July 10, 1890.

¹⁰ Lancet, March 20, 1890.

weeks continuously, this involves more labor probably than the administration of full baths, and the discomfort to the patient is quite as great. The effect upon the pyrexial symptoms, however, has been manifest.

It seems, then, that hydro-therapeutic measures in some form or other have received the general approval of the medical profession and the only question is as to the best methods. I think that the full bath of Brand is the most efficient and convenient.

Antipyretic Drugs. — The rapid disfavor into which these drugs have fallen owing to their depressing influence in unsuitable cases has, I think, led to their too general abandonment. Phenacetine, especially, in three, five or ten grain doses often proves valuable in allaying fever and modifying the nervous symptoms. Phenocoll, a newer compound, has been used in a few cases with similar effect.

Laxatives in the first week fulfil a rational indication and of these I think the salines are preferable.

Internal Antiseptics by the use of minute doses of calomel, salol in five-grain doses several times daily, naphthaline, salicylate of bismuth and naphthol, has been attempted in a more or less systematic manner at the City Hospital. Of these agents hydro-naphthol in doses of from two to four grains every two hours has appeared to have influence in modifying diarrhea and the offensive character of the stools. But it is doubtful whether the infecting germs and poisonous alkaloids can be effectually neutralized in this way by any harmless agent.

Hydro-naphthol. — Between May 9, 1891, and January 1, 1892, 103 cases of typhoid were admitted to the second medical service, 83 males and 20 females; 48 had diarrhoea, 55 had not; 45 were treated with hydro-naphthol, 58 were treated without hydro-naphthol. Of the former series two died; of the latter series seven died. None of those who used hydro-naphthol had hemorrhage from the bowels, while three of the others had. In 27 patients diarrhea diminished or ceased while using this drug, often after a few days, sometimes not for two weeks. Relapse took place in six patients who were treated without hydro-naphthol and in four who took this drug.

About 30 patients without regard to the presence or absence of diarrhoea were treated from the time of admission continuously with hydro-naphthol, at first, every two hours, later every four or six hours until convalescence was well established, in the hope of preventing relapse. Two of these patients had relapses, nevertheless, and one died with symptoms of perforation of the bowel. No ill-effects attributable to the drug itself were noticed in any case. These facts were tabulated by Dr. Benjamin Tenney, house-physician, who watched all the cases.

Stimulants. — Too early use of stimulants as well as their over-use, is to be guarded against. But with the large number of alcoholic subjects who come under treatment it is often difficult to decide how far it is prudent to withhold their accustomed stimulus. A weak heart and rapid pulse should be the guides, in spite of nervous symptoms which may supervene. As in pneumonia, delirium tremens often comes on in typhoid patients several days after admission.

In general, careful attention to the digestion and to the eliminating organs, a free supply of drinking-water, correct estimation of danger-signals, and prompt application of such measures as each case may demand are of more importance in the management of this

complicated malady than any systematic method, however brilliant its results may appear to be.

But we cannot escape the fact that the mortality from typhoid fever has diminished all the world over during the last twenty-five years, and that Brand's system of bathing is thought by a large number of the best observers to be an important factor in this reduction.

CONCLUSIONS.

(1) That in the Boston City Hospital the mortality in typhoid fever from patients admitted moribund and with grave complication is 4%.

(2) That at least 3% more die from intestinal perforation and hemorrhage.

(3) That little diminution in the mortality from these causes can be expected under any mode of treatment.

(4) That the mortality from renal, pulmonary and circulatory disturbances, from diarrhea and pyrexial exhaustion, is about 3.5%.

(5) That, excluding deaths from intestinal perforation and hemorrhage, the mortality among females is 3.4% greater than among males.

(6) That a diminution of 2% in the general mortality might be expected from the systematic use of cold baths, the reduction being largely in females.

(7) That favorable results followed the trial of intestinal antiseptics, but that relapses were not prevented thereby, and that a much wider experience is necessary to determine their value.

CASES OF LAPAROTOMY PRESENTING FEATURES OF UNUSUAL INTEREST.¹

BY CHARLES P. STRONG, M.D.

Assistant Surgeon, Free Hospital for Women, Physician to Out-patients, Massachusetts General Hospital, etc.

MANY of the operations performed by me during the last eight years, involving opening of the abdomen for various reasons, have been reported; but there remain others, presenting certain points of interest, which have not been reported. I wish to emphasize and illustrate by some cases the following points:

The difficulties of diagnosis of abdominal growths.

Results of removal of the uterine appendages in their influence upon menstrual disorders associated with reflex symptoms.

Change, as of senile atrophy, rapidly following the removal of diseased ovaries.

Certain unexplained results; for example, decrease in tumors with subsidence of symptoms following laparotomies, which are but little more than exploratory incisions.

The difficulties of diagnosis of abdominal growths.

Mrs. L. S., thirty-eight. Married six years. One miscarriage at six months, five years ago, since which time menstruation has been more abundant.

Examination under ether December 10, 1889. The patient had previously to this time been under treatment in the out-patient department for hemorrhages, very constant and very profuse, confining her to bed for two weeks at a time. During the past three months these hemorrhages had been almost without cessation. She entered with a diagnosis of submucous fibroid. A mass the size of a pigeon's egg, firmly con-

¹ Read before the Obstetrical Society of Boston, February 13, 1892.

nected to the uterus, was found on the left. In the median line was felt a mass extending up to the umbilicus, the pubic outline of this induration ill-defined. The fundus of the uterus could not be mapped out. On the right side was a firm, movable mass about the size of the kidney, at the level of the umbilicus. The depth of the uterus was four and one-half inches. The curette brought away, through an os that readily admitted two fingers, considerable masses of tissue, which Dr. W. F. Whitney pronounced hyperplastic uterine mucous membrane. The diagnosis of fibroid was apparently confirmed by this examination, in so far as it was possible to make any diagnosis.

The hemorrhage not being checked by the curetting, the patient was operated upon, and the following condition found: The left tube convoluted and twisted upon itself, and glued to the uterus, its cavity distended with puriform secretion, formed the mass on the left. On the right, the whole broad ligament spread over the intestines like the omentum, and was attached at the level of the umbilicus. The right tube was very much enlarged, holding about four to six ounces of puriform material. This kidney-shaped mass, which felt like a pediculated fibroid, the omentum and the apron-like broad ligament were firmly adherent throughout their extent, and the intestines were also matted together by both chronic and recent adhesions. The case was one of double purulent salpingitis and pelvic peritonitis.

Results of removal of the uterine appendages in their influence upon menstrual disorders; reflex symptoms.

Mrs. H. N. T., thirty-two. Mother of three children. Questionable miscarriage a year and one-half ago, at two months. Seen in June. Always been well previously until March, when it was supposed that she had an attack of malaria, as she had chills and fever. These were accompanied by very little pain on the right side. In bed about half the time. In May a swelling was noticed on the right side; coincident with the appearance of this swelling, there was pain in the right leg along the course of the sciatic nerve, and pain which shot up along the course of the right ureter. The pain was so excessive as to demand frequent and large doses of morphia. Patient much emaciated; general condition very poor; occasionally a high temperature; most of the time the temperature very slightly elevated above normal. Depth of uterus between three and three and one-half inches. No catamenia since March, that is, three months. Had previously been entirely regular.

Under ether there could be felt an enlarged tube on the left side. On the right side there could be felt adhesions; and in the median line a mass about the size of the fetal head at term — elastic, not distinctly fluctuating, not separated from the uterus, lying toward the right side, and on the anterior surface of the uterus. This tumor had increased somewhat in size since it was first discovered, but not rapidly. The diagnosis was between a uterine fibroid and salpingitis, with the preference rather in favor of the former from the relation of the mass to the uterine body. I operated the first of August, and found the mass overlying the uterus to be a tubo-ovarian abscess, densely adherent to the surrounding tissues. The ovary contained a cyst the size of a man's fist, into which the thickened tube opened freely; this cyst was filled with somewhat offensive pus. In consequence of the manipula-

tions necessary to free it from its adhesions, tears were made into the rectum and into the tube, so that the pus escaped freely into the cavity of the rectum and the abdominal cavity. The rectal tear was stitched up by a continuous suture of fine silk. The left tube was also freed from its adhesions and removed; it was enlarged to the size of the little finger and contained pus. The abdominal cavity was washed out and the patient made a perfect convalescence.

In this case it was impossible to say that the tumor felt before the operation was not fibroid. Its location, the symptoms caused by its presence, were all indicative of fibroid rather than salpingitis. The estimated contents of the two tubes was a pint in the right side, a half a pint in the left.

I operated during December, 1890, upon three cases to bring about cessation of the menstrual flow, and involution of the genital uterine organs.

Miss G. C., school-teacher. Bed-ridden for two years; intense dysmenorrhea; probably from the history, membranous dysmenorrhea. Had been dilated, curetted, galvanized, undergone the rest cure, and, in fact, had every treatment that could be suggested, without relief. Removed both tubes and ovaries, which were reported by Dr. Whitney to show increase of cicatricial tissue in the ovaries; tubes slightly catarrhal. The patient has entirely recovered. Superintended and performed a housekeeper's work on a large farm where there were many boarders last summer, and is self-supporting in every way, and entirely free from abdominal pain at the present time.

Miss S. B. Associated with the dysmenorrhea was intolerable backache and pain in the side. She had been attendant at the out-patient department for nearly four years pretty constantly. Uterus was retroflexed and strongly adherent. By one or two etherizations and manipulations the adhesions were broken up, and the uterus replaced; but it never stayed long in its position. The shortening of the round ligament kept it in place six months; then it went backward, due to the traction of the unruptured adhesions, uniting the uterus and rectum. Both broad ligaments were shortened and thickened. The laparotomy showed that the reason for the falling backward of the uterus was not due to the stretching of the round ligaments, but to the fact that they had each ruptured at the uterine attachment, permitting the fundus to go backward. The patient is now very well; not strong as she will be, but gaining constantly. Her weight has increased from ninety-five to one hundred and fifteen pounds.

Miss K., thirty years of age. Always had dysmenorrhea, which, during the past few years, has steadily increased, rendering her unable to perform her duties as nurse. Headache nearly constant, pain over each ovarian region, nausea. The inter-menstrual periods too short to permit complete recovery of strength. Previous treatment very thorough, including rest, galvanism, drainage of uterus.

Both Fallopian tubes and ovaries removed. Report, December, 1890: "The microscopical examination showed evidence of a former catarrhal salpingitis with cicatricial contraction in both tubes and ovaries." Convalescence uneventful. Since the operation the patient has performed her duties as nurse, and gained flesh and strength, suffers from no reflex phenomena and considers herself entirely well.

These three cases represent the favorable results

which may be accomplished by this treatment; but, as I have always taken occasion to state, I never would advise removal of the uterine appendages to overcome symptoms on any account, unless these symptoms were acutely threatening, without first having the patient pass through preliminary palliative treatment of suitable duration and character.

Change, as of senile atrophy, rapidly following the removal of diseased ovaries.

Mrs. L. Was referred to me last December for operation, having a large rectocele and lacerated and sub-involved uterus. On examination, I found in addition to these lesions, an ovarian cyst upon either side, which I removed by laparotomy, and which proved to be dermoid, and occupied, so far as could be determined, the entire structure of the ovary, consequently these must have formed rapidly, as her child was only eighteen months old at this time. She made a perfectly uninterrupted recovery, and was to report six months later for the plastic operation first advised. At that time there were such marked changes of atrophy occurring, that I deemed it best to wait until further time had elapsed to see if this operation could be avoided.

January, 1892, one year from the operation, I found atrophy of the uterus and the vagina, and a senile-vaginitis with its tendency toward adhesive inflammation, as marked as though she had normally passed the climacteric ten years.

Certain unexplained results; for example, decrease in tumors with subsidence of symptoms following laparotomies, which were but little more than exploratory incisions.

Miss M. S., twenty; single; school-girl.

December 9, 1890. Previous history and family history both good. Three months ago had pain in both ovaries and lumbar region, coincidental with a profuse, greenish discharge from the vagina; frequent and painful micturition. The menstrual history is of interest. Before this, for a number of years, she had been regular, flow lasting four days, and requiring six to eight towels. The first menstruation after this pain began lasted but one day and she used but one towel. The second appeared two weeks late, and then was brought on by medicine which her medical attendant gave her. The third was similarly late, but had appeared without the use of medicine or treatment.

The pains at first lasted about an hour, occurring only two or three times daily, without abdominal tenderness on pressure. These pains grew steadily worse, both in frequency and severity. Ten weeks ago these attacks were followed by fever, intense pain and abdominal soreness, necessitating confinement to bed, with indefinite, but large doses of morphia; a temperature varying from 102° to 104° , and very considerable bladder irritability.

I first saw the patient December 9, 1890. She had then been in bed ten weeks, and was more or less completely narcotized. Her temperature was 102° , abdomen very sore, slightly enlarged. The following day, under ether, I found by examination, that there was atresia of the vagina about two inches within the vulva, through which I could not insert an ordinary sound. Combined rectal and abdominal dilatation showed a mass upon either side of the pelvis, dense, elastic, non-fluctuating, indistinct in its outlines, but

extending, apparently, across the whole pelvis. I made a diagnosis of salpingitis and peritoneal adhesions. There was no vaginal discharge of moment, so that I restored the vagina, by curetting and dilating, to its normal dimensions. The posterior cul-de-sac was lacking, the cervix terminating abruptly the upper end of the vagina.

Rest in bed, and the employment of hot douches produced little effect upon the temperature, which continued fluctuating daily between 100° and 102° , with regularity. The patient's general condition seemed quite good, with this exception.

I operated January 2d. Through an incision of two inches it was found that the omentum was glued everywhere to the surface of the abdominal walls. The perineum was much thickened, and everywhere there were light, fresh adhesions which were easily separated. Deflecting the omentum upward and backward, there occurred a discharge of six to eight ounces of clear, serous fluid. There was no evidence of any cyst having been opened, but everywhere, as the finger was swept about, it encountered matted masses of intestines, which in part were easily separated, and the intestines of which were filled with fluid of encysted peritonitis. This line of pelvic peritonitis terminated sharply at the brim of the pelvis, above which were all the intestines except the rectum and some few matted and adherent coils of the smaller intestine.

The adhesions which bound these parts together were, as a rule, well organized and very strong. Many of them existed as long bands, notably one or two which seemed to stretch entirely from one side to the other of the pelvis like a piece of twine. These long bands were, as a rule, about as large as a lead pencil. The largest cavity that was opened, contained perhaps, about six ounces of serum. Multitudes of smaller cysts contained amounts varying from a few drops to an ounce or two.

There were two especially distinct masses to which the tubes could be traced, and which probably contained the ovaries, but an attempt to dissect these out to remove them, showed that the ureter on either side was also implicated in these masses, consequently, I terminated the operation by breaking down all the adhesions possible, by sponging out and rupturing all the cysts, and by replacing, as far as possible, the intestines in their normal position. Convalescence was uninterrupted. Pain ceased from the time of the operation; temperature fell to normal, and remained there. Examination under ether, one month after the operation, showed that there was present two distinct masses; one on the right, about the size of a pigeon's egg, and one on the left, about the size of a hen's egg. The patient has reported from time to time, is perfectly well, going to school again, and menstruation has resumed its normal course.

Miss M., nineteen. Referred to me by Dr. Marion. Gives history of having passed through two severe attacks of pelvic inflammation, accompanied by high fever. It was supposed at that time that she had salpingitis. The last attack had been about two months before I saw her. There was a firm, dense, resisting mass to be felt, filling the left side of the pelvis, crowding the uterus to the right, very tender. The exploratory incision showed this to be a fibroid growth beneath the front of the broad ligament; its seat of attachment to the uterus occupying about two-thirds of

the lateral surface of that organ; non-pediculated intramural. The broad ligament and uterus were so matted together, as the result of previous peritoneal attacks, that it seemed unwise to attempt the enucleation of the fibroid. The patient made a good recovery from the exploratory incision, has been able to resume her work, has declared that there is a noticeable decrease in the size of the mass, and that she is entirely free from pain, unless after very prolonged exercise, when she finds that the left side tires more easily than any other part. Exactly what local change, if any, has taken place here beyond that of freeing the adhesions, I am unable to say, but certainly the patient has practically received great benefit.

PURULENT OPHTHALMIA NEONATORUM AS A CAUSE OF BLINDNESS.¹

BY FREDERICK E. CHENEY, M.D.

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THE term, purulent ophthalmia neonatorum, is used in preference to ophthalmia neonatorum in this paper, for the reason that the latter seems to me objectionable, including as it does all inflammation of the conjunctiva occurring in the new-born. A very large proportion of these cases are extremely mild in character; they recover rapidly with the use of "borax and camphor," or some other mild collyrium, and stand in the same relation, as regards importance, to the purulent variety, that simple catarrhal conjunctivitis in the adult, does to gonorrhœal ophthalmia. If purulent ophthalmia neonatorum could be more generally applied to the disease so much discussed and written about as a cause of blindness it would undoubtedly save much confusion. The character of this affection is so well-known that more than a brief mention of its symptoms and appearances is unnecessary. It usually begins within three or four days after birth, — occasionally as late as the seventh or eighth. At first, the discharge is thin and watery, but it soon becomes thick, yellow, and copious. The conjunctiva is greatly injected, the lids are considerably swollen, and if they be everted, the palpebral conjunctiva will be found infiltrated and thickened, with an intensely red, velvety look, and will bleed easily on slight irritation. We have, in fact, a purulent inflammation of the conjunctiva caused by infection from some morbid vaginal secretion, and which to all appearances, differs from gonorrhœal ophthalmia only as regards its lesser intensity. By an unfavorable termination of the disease, we understand that a secondary inflammation of the cornea has taken place, which has resulted in an impairment, or entire loss, of sight. It is but natural that the gravity of the affection should be more fully realized by the oculist, who is continually seeing the unfortunate results, than by the other members of the profession who, perhaps, see but one or two such cases in a lifetime. Statistics as to the cause of blindness, from various asylums are, however, so nearly uniform in the per cent. attributed to this disease, that there can be no question of exaggeration as to its importance. For example, the asylums of Switzerland, give 26.02% to this cause, of Germany, 25.83%, of Hungary, 20.47%, while in this country, the New York State Asylum, at Batavia, gives

19.5% (Howe), the Philadelphia Blind Asylum, 20% (Harlem), and the Perkins' Institution for the Blind, with the Kindergarten at Jamaica Plain, 18.6% (Derby).

In an article entitled "Legislation for the Prevention of Blindness," Dr. Howe, of Buffalo, writes concerning this disease as follows: "There is a perfect unanimity of opinion that when these cases are seen at the very outset, the eye can be saved in almost every instance with little or no injury, while, on the other hand, ulceration and perforation often occur when the children are neglected until the disease is far advanced."

If it is a fact, and I believe it is, that purulent ophthalmia neonatorum terminates favorably in almost every instance, when recognized and properly treated from the beginning, neglect or ignorance is accountable for about one-fifth of all the cases of blindness occurring in early life. For obvious reasons, the affection is most prevalent among that class of patients who are the least able to comprehend its serious nature, and who, consequently, often fail in obtaining proper medical advice until it is too late to be of any value. In a hope of rectifying, in a measure, this unfortunate state of affairs, at the recommendation of Dr. Howe, made in a paper read before the New York State Medical Society, February 18, 1886, on "Purulent Conjunctivitis of Infancy and Blindness," the following law, headed "An Act for the Prevention of Blindness," was adopted by the New York legislature:

SECTION 1. Should any midwife or nurse having charge of an infant in this State notice that one or both eyes of such infant are reddened or inflamed at any time within two weeks after its birth, it shall be the duty of such midwife or nurse so having charge of such infant, to report the fact in writing within six hours to the health officer or some equally qualified practitioner of medicine of the city, town or district in which the parent of the child reside.

SECT. 2. Any failure to comply with the provisions of this act shall be punishable by a fine, not to exceed one hundred dollars, or imprisonment not to exceed six months or both.

SECT. 3. This act shall take effect on the first day of September, eighteen hundred and ninety.

This law has been in force for so short a time, that it is impossible to arrive at any definite conclusions as to the amount of good it is capable of accomplishing. If the per cent. of blindness from this cause can, however, be decreased in the least degree by the adoption of such laws, other States should not be slow in following the lead taken by New York in this matter. In Boston, the employment of midwives is, I understand, a very much less common practice than formerly, since the establishment of the "Out-Patient Department" in connection with the Lying-in Hospital. In other parts of this State it is probably still considerably practised, and if an act for the "prevention of blindness" should be adopted by the legislature of Massachusetts and properly enforced, some good would undoubtedly result.

The nurse and midwife cannot, however, be held accountable for every unfortunate case. The physician is, in many instances, directly responsible in that precautions are not taken for the prevention of the disease, or it is not properly treated when found to exist. The result of bad treatment in diseases of the eye is apt to be more apparent, both to the physician and patient, than are errors of equal gravity in other situa-

¹ Read by invitation before the Obstetrical Society of Boston, February 13, 1892.

tions; and it is probably for this reason that the study of ophthalmology is more neglected by the general practitioner than are the other special branches of medicine, it being thought unnecessary to give much attention to a subject, whose practice is regarded both by the profession and laity, as best confined principally to the hands of the specialist. There are, however, a certain class of cases, and first among them purulent ophthalmia neonatorum, that may be properly considered in the light of emergency cases, and which every practitioner should be as well qualified to treat as he is pneumonia, dysentery, scarlet fever and the various other troubles that are usually considered as falling more within his province. The physician is or near the city can, if he choose, transfer the responsibility of these cases to the oculist, but in the country he must take entire charge, and will be held accountable for any unfortunate result. It is of the first importance, therefore, that the value of prophylactic measures, and the necessity of a thorough and intelligent treatment of the disease, should be more generally recognized by members of the profession. The large number of outpatients that come under the supervision of the Boston Lying-in Hospital, offers, it seems to me, an exceptional opportunity for the practical illustration of the points in question; and if certain regulations could be introduced and systematically carried out, I am confident that results published at the end of five years would emphasize their importance, in this vicinity at least, as no other method would be capable of doing. The custom of washing the vagina before and during labor, as practised in this institution, is certainly to be commended; and if, in addition, a single drop of a two per cent. solution of nitrate of silver could be dropped into the eyes, after they have been thoroughly cleaned, as recommended by Credé, the chances of this disease making its appearance would be still further lessened. A moderate amount of irritation is usually produced by this procedure, the eyes being red and watery for two or three days. If, however, but one or two drops have been used, nothing more serious is to be looked for. Dr. Noyes, in his text-book on "Diseases of the Eye," expresses the opinion that a one per cent. solution can be employed with equally good results, and in the hands of the inexperienced it would probably be safer to use it. If, in spite of these precautions, a purulent inflammation develops, the child might be referred at once to the Massachusetts Charitable Eye and Ear Infirmary, or some other institution, where a record could be kept of the case, as to the severity of the inflammation, condition of the eyes at time of discharge, etc., and made use of later, if desirable. It would not be difficult to arrange some such system and it would undoubtedly produce satisfactory results, not only in directly preventing a few cases of blindness, but also in impressing upon the minds of future practitioners, the fact that purulent ophthalmia neonatorum is a serious trouble and one that must not be neglected.

There is very little difference of opinion as to the value of nitrate of silver in the treatment of this disease, and if this agent is properly used, in connection, of course, with thorough cleanliness, that is, in keeping the eye as free as possible from the purulent discharge, the results will be almost invariably satisfactory. Its daily application in a one or two per cent. solution to the palpebral conjunctiva, as long as the lids remain infiltrated, and there is the least purulent discharge, seems to me of the utmost importance. It

is not at all unusual to meet with cases where this treatment has been discontinued too early, and the inflammation again becomes decidedly active in consequence. It is certainly a safer plan to continue its use for a few days after the discharge has entirely ceased.

Clinical Department.

TWO CASES OF PREGNANCY AND LABOR AT TERM, FOLLOWING THE ALEXANDER-ADAMS OPERATION.

BY F. W. JOHNSON, M.D.,

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CASE I. J. K., married, thirty years of age, mother of two children, was sent to me by Dr. J. J. McCann, September, 1889.

Since last confinement, five years ago, has aborted four times; at seven, five, seven, and three months respectively. Last abortion occurred in June, 1889. At this time there was excessive flowing, but no history of inflammatory trouble. Dated her trouble from the third abortion, which occurred Christmas, 1888. As in June, there was excessive flowing, but no symptoms of inflammatory trouble. Menstruates every twenty-five days. Flows three to four days. Flows but little. No dysmenorrhoea. Complained of sagging and dragging down, and leucorrhœa. She was one of those fat, fleshy neuroasthenics so well described by Dr. Mitchell.

Diagnosis: Ruptured perineum; retroflexion; bilateral laceration of the cervix; left ovary prolapsed and adherent beside the uterus at the base of the left broad ligament. This diagnosis was verified, under ether, by Dr. Conant and myself.

After using the packing for a few weeks the uterus became perfectly movable, but a pessary could not be worn owing to the so-called "thickening" at the base of the left broad ligament, which "thickening" I have always found to be due to a prolapsed ovary or tube, or both, and not in any way caused by a thickening in the broad ligament.

In a very large experience with examinations under ether, both through the rectum and with the fingers inside the abdominal cavity, I have never found any alteration in any way, shape or manner in either broad ligament that would suggest a previous attack of inflammation in the cellular tissue. Except in cases of sepsis following an abortion or labor, pelvic cellulitis is rare.

The sagging and dragging down still continuing she was advised to have the lacerated cervix repaired, and to have the round ligaments shortened to correct the retroflexion.

February 21, 1890. Operation. Dr. W. M. Conant assisted. Both the operation on the cervix and the Alexander-Adams were a success, and relief was obtained from all pelvic symptoms. I saw her every month or two, and she remained perfectly well as far as the contents of the pelvis were concerned. November, 1890, she became pregnant, and was delivered August, 1891.

In answer to several questions, Dr. McCann, who attended her, wrote the following concerning the case: "There was one thing peculiar about the pregnancy.

She carried the child much higher than ever before. Had much better health and less sickness during the nine months. These three facts are in strong contrast with similar conditions in every previous conception."

Length of labor? "About one and three-fourths hours."

Sex and weight of child? "Boy: nine and one-half pounds."

Character of labor? "She had good pains, better than ever before."

Puerperium? "She remained in bed fourteen days. She flowed a good deal—not post-partum haemorrhage—but during her stay in bed she lost considerable blood, although there was good and permanent contraction of uterus. She was weak on getting up, but nothing of interest occurred. She nursed the baby."

What is the condition and position of the uterus? "The womb seems a little heavy, but in normal position. It does not seem lower or dependent, yet she passes a considerable yellowish discharge."

October 29, 1891. Examined at my office. Uterus in perfect position. Cavity measured two and one-half inches. No discharge from vagina or cervix.

CASE II. M. McG., married, twenty-seven years of age, was sent to me by Dr. J. J. McCann, December 29, 1890. She complained of pain in the back and in the left ovarian region. Every month for the past year, midway between each menstrual period, suffers from nausea and vomiting. Menstruation began at sixteen; regular every four weeks. Flows moderately for three days. Some dysmenorrhœa for the first two days of the flow. No children. No abortions. General health good. She sought relief for sterility.

Diagnosis: Retroversion with adhesions; left ovary prolapsed; chronic endometritis.

January 21, 1891. Operation. Dr. Conant assisted. Cervix dilated for drainage. Round ligaments shortened. Ligaments fastened with silk-worm-gut. Incision closed with silk.

January 27th. Superficial abscess on the right side.

January 29th. Small superficial abscess on the left side.

February 21st. Uterus in perfect position, except that it was drawn over towards the right side. The right ligament was probably so shortened that during healing it drew the uterus away from the left side. Discharged well.

March 7, 1892. Reported at my office. Menstruated for the last time March 25, 1891. Confined December 28, 1891.

During the third and fourth months there was some morning sickness, "about every other morning." During the last two months of pregnancy she had considerable pain in the right side with bearing-down. In labor seven hours. Staid in bed fourteen days. There was a bloody discharge from the vagina for four weeks after confinement.

The child was a female, and weighed about five pounds. Examination found the uterus in the same position that it was when she went home, February 21, 1891. The left ovary could not be found. Since the operation there had been complete relief of all backache and of the pain in the left ovarian region. There was present endometritis.

A MORAL CITY.—A Chicago paper states that a manufacturing chemist of that city recently received an order for five million aphrodisiac pills.

Medical Progress.

RECENT PROGRESS IN GYNECOLOGY.

BY F. H. DAVENPORT, M.D.

PROLAPSE OF THE FEMALE URETHRA.

KLEINWÄCHTER¹ has found in the literature of the subject the records of nearly a hundred cases. As a result of a careful study of the cases, he has come to the following conclusions:

(1) Urethral prolapse is by no means so rare an occurrence as has been generally supposed.

(2) The cause of the prolapse is as yet not fully understood; this much is sure, however, that the age of the patient plays the most important part.

(3) Children are most frequently affected, probably as a result of the peculiar typographical anatomical relations of the bladder and urethra.

(4) Next to children, but much less often, women who have passed the menopause are affected. This is probably the result of senile involution.

(5) Women in the height of sexual activity are most rarely the subject of this affection, in spite of the fact that they are apparently most exposed to those injurious influences which might cause prolapse.

(6) Prolapse of the urethra is of varying importance according to the place where the separation of the mucosa from its underlying structure begins, and in consequence calls for different operative measures.

(8) The separation of the mucosa in the lower part of the urethra with consequent prolapse requires only a simple operation, the removing with knife or scissors of the prolapsed mucous membrane and uniting the cut edges.

(8) If the mucosa becomes separated higher up in the urethra and later is crowded down, this is not a simple prolapse but an inversion of the mucous membrane with prolapse. Such a condition requires the opening of the urethra and the removal of a portion of the separated mucous membrane with subsequent suturing of the wound.

(9) If the prolapsed mucous membrane is removed regardless of the form of prolapse present, much damage may be done.

(10) Ligating the prolapsed part is entirely contrary to the principles of antiseptic surgery.

DRAINING AFTER ABDOMINAL SECTION.

Dr. R. B. Hall² makes a strong plea for drainage after abdominal section. He claims that in the majority of fatal cases of laparotomy, the cause is sepsis from the absorption of septic fluids in the peritoneum. For this reason he would keep the peritoneum drained until the fluid removed is straw-colored. It has been his practice to do this in every case, simple or complicated, removing the tubes if it is found unnecessary, in from eight to ten hours. He has never had bad results, either in the way of its being a source of septic infection, or a cause of hernia, or from the omentum being caught in the perforations, and he says he has saved the lives of several patients by putting in a drainage-tube when it was apparently not indicated.

DRAINAGE OF THE UTERUS.

Dr. W. M. Polk³ describes a method of draining

¹ Zeit. für Geb. und Gyn., Band xxii, Heft 1.

² Medical Record, December 12, 1891.

³ New York Journal of Gynecology and Obstetrics, February, 1892.

the uterus for chronic endometritis and metritis, not only when these conditions exist independently of salpingitis or other forms of perimetritis, but also when they are associated with such disorders. His conclusions are based on the results in forty cases that he has operated on.

He refers to the fear which has prevailed of invading the uterine cavity, especially if there is disease of the appendages, and claims that there is no ground for such fear if scrupulous cleanliness is observed, and the escape of infecting material is provided for.

His method is to thoroughly disinfect the genital tract, dilate the cervix, introduce the cervical speculum, which should have an anterior diameter of about five-sixteenths of an inch, irrigate the interior of the uterus with bichloride, curette, and then pack the cavity with gauze. This may be left in until the sixth day. As a rule, only one packing is needed, but if a second is desirable, it can be done without anesthesia at the time of the withdrawal of the first.

The results gained are depletion of the uterus, reduction in size in cases of sub-involution, cessation of endometrial discharge and the diminution in size of peri-uterine masses. There is very little febrile action following this procedure.

TEDELENBURG POSTURE FOR GYNECOLOGICAL EXAMINATION.

Stroynowski⁴ recommends this position not only in abdominal operations where a clear view of the pelvis is desirable, but also in simple gynecological examinations where the pathological condition of the pelvic organs is difficult to make out. In one case where there was considerable free fluid in the peritoneal cavity and it was of importance to determine the relations of the appendages to the uterus, this position, which allowed the fluid to gravitate towards the diaphragm, enabled the author to make a satisfactory examination. He finds that in all difficult cases it makes the exploration easier.

VAGINAL OÖPHORECTOMY.

Dr. H. T. Byford⁵ makes a plea for the more frequent employment of vaginal oöphorectomy for the removal of diseases of ovaries, and small ovarian tumors. In sixty-two cases of vaginal section he has had but one death, twenty-seven being vaginal hysterectomies, one of which died, and thirty-five vaginal oöphorectomies with no death. He prefers it in suitable cases, if for no other reason, because it avoids the danger of hernia. He gives the history of a case which presented more than the ordinary difficulties, including extensive adhesions, a right ovary buried in solid adhesions, and persistent hemorrhage requiring a Mikulicz drainage, all of which difficulties were easily met, and the patient did well.

He claims that where the trouble is low down in the pelvis, an exploratory incision through the vagina will be more satisfactory, and less of an operative procedure than an abdominal section. Usually the vagina can be rapidly dilated sufficient for the manipulation, even in the case of virgins who have passed the menopause. In only one case was perineal incision necessary.

As regards reaching the diseased parts, if the uterus is retroverted or the cervix can be pulled forward and the fundus easily pushed down into the cul-de-sac of

Douglas, Dr. Byford is confident the ovaries can be also pulled down into the vaginal opening. If the cervix is back and the fundus forward, he prefers the ventral incision. The same principles apply to the danger of wounding adherent intestines. If the structures are low down in the pelvis, there is not much likelihood of extensive adhesions to the bowel; if high up, such adhesions are more likely to occur, and they had better be approached by the abdominal route.

HYDRASTININ IN HEMORRHAGE FROM THE UTERUS.

Abel,⁶ as a result of the trial of this drug, first recommended about two years ago by Falk, in cases of meno- and metrorrhagia, considers it a valuable addition to our means of controlling hemorrhage. He found it efficacious in cases of primary bleeding in endometritis and myomata, and in secondary hemorrhage from disease of the appendages, as parametritis, tubal cysts, and tubo-ovarian tumors; also in cases of so-called ovarian or congestive hemorrhage, where no disease is found. Abel always uses it subcutaneously, and for the details of the method as regards dosage and frequency in the varying conditions present, the reader is referred to the original article. Three cases of bleeding during pregnancy were checked, and the drug showed no tendency to produce abortion.

The author considers it the best means we have of controlling hemorrhage from the uterus. Its good results show themselves only after prolonged use, hence it is of no avail in acute hemorrhages. The cause of the bleeding must be clearly made out first before the drug can be intelligently used. If used in proper cases it will often render curetting unnecessary.

ELECTRICITY IN THE TREATMENT OF MYOMATA.

The question of the value of electricity in the treatment of myomata of the uterus is again discussed in a paper by A. Martin and Mackenrodt,⁷ of Berlin. As material on which to base their conclusions, the authors have made use both of the cases which have come to them originally for treatment and in which the Apostoli method was employed, and also those where electricity had been used elsewhere, and owing to farther trouble had sought relief. In all, there were sixty-six cases, of which thirty-six were treated in the hospital; sixteen who had been treated elsewhere came for operation, and fourteen came for advice and occasional observation, but not for treatment. The last cases were rightly included as they gave valuable indications as to the final results. All were treated strictly according to Apostoli.

Of the thirty-six patients treated originally at the hospital, twenty were suffering from myomata of small size, and in all these a symptomatic improvement was noticeable as regards hemorrhage, pain and the general condition in the first-half year. In no case was there either a disappearance of the tumor, or an undoubtedly lessening in size. Of the twenty, eight were over forty-five years of age, and the coming on of the menopause contributed to the good result. Of the remaining twelve, the majority showed later a return of the flowing and pain, and were treated preferably in other ways.

The second class of cases, of which there were sixteen, so far from showing improvement, were on the contrary made worse, and three died.

⁴ *Cent. für Gyn., January 10, 1891.*

⁵ *American Journal of Obstetrics, March, 1892.*

⁶ *Berl. Klin. Woeh., January 18, 1892.*

⁷ *Deutsche. Med. Woeh., January 14, 1892.*

By a comparison of these results with those of other operators who look with favor on this method of treatment, it is seen that while the proportion of those made worse is less with them, yet in no case has the tumor disappeared, and the improvement has been lasting only when the patients are treated near the time of, or after, the menopause. The authors, therefore, consider electro-therapy as merely one of the various palliative measures for the treatment of these cases, and when the bad results and deaths are taken into consideration as a decidedly dangerous one.

Looking the whole subject over in the light of these cases treated by electricity, and of three hundred and fifty-six cases of myomata which have come to operation in Martin's clinic, the writers come to the following conclusions:

They regard the electrical treatment of myomata as an inappropriate procedure, which causes the patient pain and loss of time, results in symptomatic improvement in only a third of the cases, and makes the patient's condition worse in more than a third; they, therefore, advise against its employment.

In the case of fibroids which cause none or only slight symptoms, they employ no local treatment. If serious disturbances occur they advise operation, the character of the operation depending upon the nature of the case.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING, February 13, 1892.

DR. F. E. CHENET read, by invitation, a paper on PURULENT OPHTHALMIA NEONATORUM AS A CAUSE OF BLINDNESS.¹

DR. C. E. STEDMAN said he had seen no case of ophthalmia for a long time until last summer, when he had a severe case which for a long time resisted treatment. He was particularly surprised at the occurrence of this case, for the most careful antiseptic precautions had been taken and the trained nurse was one of the best.

DR. MCCOLLUM said that he had had a few cases of ophthalmia neonatorum at the Chardon Street Home, and he had used nitrate of silver and zinc in the treatment, but he considered frequent washing and strict cleanliness to be the most important measure.

DR. WM. INGALLS, out of a large number of obstetrical cases seen in private practice, had had but two or three cases of ophthalmia, and they had all recovered. He believed that his freedom from this trouble was due to the fact that he always made a practice of wiping the babies' eyes immediately the head was delivered.

DR. A. D. SINCLAIR had had but one case of ophthalmia neonatorum where the eye was lost, and that was in a wretched case in Edinburgh where the treatment of cleanliness was not properly carried out. He felt sure, however, that he would have lost other cases if he had not always insisted on very frequent washing of the affected eyes.

DR. WITTINGTON referred to an instructive case of ophthalmia which occurred in his practice a year ago,

and the only case he had had. The patient was first seen three days before delivery, and a pessary that had been worn nineteen months was removed from the vagina. Frequent antiseptic douches were given to combat the resulting vaginitis, but even with the greatest care the child had a violent conjunctivitis which lasted a month but left no injury. He treated the case with water and with a solution of alum.

DR. GAVIN said that most physicians were not provided with a retractor for the eyelids such as the reader referred to, and he had found that one could easily be extemporized from a hair-pin bent at right angles. In the few cases of ophthalmia that had occurred in his practice he had used alum in the strength of ten or fifteen grains to the ounce.

DR. CLEMENT spoke of three cases that he had seen, which made good recoveries. The treatment consisted of frequent cleansing and the use of a bichloride of mercury solution in the strength of 1-5000, which seemed to do more good than anything else.

DR. DUNBAR saw a case a year ago, the cause of which he was at a loss to discover, until he found that another practitioner was treating the father for gonorrhoea.

DR. GERRY referred to two cases of ophthalmia, the first of which was of a severe nature, no doubt of gonorrhœal origin. The mother had cystitis and the father had a persistent rheumatism of a gonorrhœal character, although the latter disease was denied by the man. He succeeded in saving the eyes, using a weak solution of corrosive sublimate and also a solution of nitrate of silver which accomplished what the corrosive solution did not. In the second case, of mild nature, the mother an intelligent woman and a reader of "Babyhood," evidently thought that he had done wrong in not washing out the vagina before labor.

DR. J. STEDMAN insisted on the importance of wiping the eyes with a clean napkin as soon as the head is delivered.

DR. C. W. TOWNSEND said that the reader had suggested the advisability of the routine use of nitrate of silver after delivery in the clinic of the out-patient department of the Lying-in Hospital. Nearly a thousand cases were attended during the last year, counting in the two hundred in the obstetrical department of the Boston Dispensary. Out of those, although nitrate of silver is not used at birth, but very few cases of ophthalmia are seen, and these, as a rule, respond readily to treatment by washing with water and the use of nitrate of silver, and he could not recall a single case where the eyes had been lost. Under these circumstances he questioned very much whether it would be advisable to use nitrate of silver as a routine practice at birth, especially as the ignorant mothers would object and would attribute any conjunctivitis due to the introduction of dirt to this treatment. In the hospital, before the days of antisepsis, ophthalmia was very common. The routine use of nitrate of silver at birth almost did away with the trouble, but it was found that with antisepsis during labor and careful washing of the eyes at birth, as good results could be obtained.

DR. EDWARD REYNOLDS would object to the use of nitrate of silver in every case, for he believed that the slight serous discharge occasioned by it would cause much anxiety to the parents.

DR. G. J. BLAKE had formerly seen a good many cases of ophthalmia in the hands of the midwives. Frequent washing and the use of nitrate of silver had

¹ See page 362 of the Journal.

been his treatment. He remembered the objection of a prominent occultist that the solution might stain the tissues.

DR. CHENEY, in closing, said that undoubtedly cases could be cured without the use of nitrate of silver, although he believed that this treatment was the most successful. The disease had, as in a case spoken of by Dr. Green, developed as late as the eighth day, although contracted at birth.

DR. C. P. STRONG reported

CASES OF LAPAROTOMY PRESENTING FEATURES OF UNUSUAL INTEREST.²

DR. DAVENPORT said that he considered the question of the advisability of the removal of the appendages for symptoms alone as the most important one suggested by the paper. While it is true that a reaction has set in against the indiscriminate operating of a few years ago, yet the best surgeons would probably not refuse to operate in certain cases, even though no appreciable pathological change were present. His own opinion was that, where severe symptoms were present, which were either connected with the pelvic organs or were associated with the menstrual epoch, and other appropriate measures had been tried for their relief without success, that then an exploratory incision was justified. This was the more so, since the most careful examination in competent hands, under ether, may fail to recognize the existing conditions.

In the few cases which he had operated on for symptoms, he could not say that any had been made worse. One or two cases, however, had not improved, but in this way, that though the particular symptoms for which the laparotomy was performed, were relieved, yet other perhaps quite as troublesome ones took their place. One case of persistent menorrhagia with intense pain, which had resisted all treatment for years, was relieved of the flowing, but now suffers from constant pain below the scar, in the bladder and rectum, and cannot do any more work than she could before. He does not consider it justifiable to operate where the symptoms are those of neurasthenia, without special reference to the pelvic organs; but, under the conditions described above, it is the surgeon's duty to give the patient the chance of an operation.

DR. F. B. HARRINGTON believed that certain carefully selected neurasthenic cases could be relieved by ovariotomy. There are other neurasthenic cases, however, where this operation would be of no value, for if a local trouble is relieved at one point, it is sure to recur at another. As an illustration of the sort of cases that could be relieved, he referred to one who had been bed-ridden for three or four years. The tubes and ovaries were removed, and the patient is now well and about. The tubes were found dark and congested, and the ovaries contained some cysts.

DR. G. W. GAY said: One of the early subjects of this operation has been a patient of mine for many years. She is highly neurotic, so much so, that a neuralgia in some part of her body has come to be her natural condition. The removal of the left ovary had not the least effect upon the pain, from which she had suffered for years, and from which she continued to suffer for about three years after the operation. This patient, like many other neurotics, gets along much more comfortably without medicine and medical treatment, than she ever did with them, for the reason,

I presume, that her attention is not so constantly directed to herself.

Several cases of oophorectomy for neuralgia have come to my personal knowledge, in which no relief followed the operation. Under these circumstances it is fair to conclude, that the cause of the pain was not local in its character, but had to do with the general nervous system. Too often pain, distress and all sorts of suffering seem to be the fate of these unfortunate women, however they may be treated.

I have not yet arrived at such a stage of development, as to have no respect for the peritoneum. Such a doctrine is hardly safe for the youngest members of the profession, despite the fact that a few surgeons have done scores of laparotomies without a fatality. The operation in the hands of most surgeons is not free from danger.

For these two reasons then, unless some organic change could be detected, I should hesitate a long time before removing the ovaries for simple neuralgia.

DR. BOWLES agreed with Dr. Harrington that ovariotomy should not be performed in some cases of neurasthenia as nothing was accomplished, although in others carefully selected it was of value. In one case he had seen from time to time, the ovaries had been removed, but the neurasthenic symptoms remained as bad as ever. She was a uterine crank.

In another case he was asked as to the advisability of doing an operation. He was unable to find any disease on examination, which was followed by an hysterical attack of pain and fever, and he declined to operate. She was taken to a hospital for neurasthenics which took fire and she has been better ever since.

Another case where there had been much pain and a small tumor was found, he had operated on a few days ago and removed a small dermoid cyst. A good many years ago while making autopsies he was surprised at the frequency of small cysts of the ovary or tuberculated extremity of the tubes, perhaps as many as one in five, where there had been no symptoms, the patient being under observation at the City Hospital. They may therefore exist without causing any harm, and they should only be removed when there were symptoms referable to them.

DR. G. HAVEN spoke of two cases where ovariotomy gave relief from severe neurasthenic symptoms. The first case had had severe pain at each menstrual period keeping her in bed most of the time. She had been treated in institutions and outside without any relief. As a last resort he performed ovariotomy two years ago, finding only a small cyst in one ovary. She made a good convalescence, has been much relieved and able to do a certain amount of work. The second case had been suffering much pain for seven years, spent a good part of the time in bed and at various institutions, treatment being of no avail. A short time ago he removed the tubes and ovaries, which were reported to be slightly thickened and edematous by Dr. Mallory. Since then she has felt and slept much better and three or four days ago walked half a mile.

DR. C. P. STRONG, in conclusion, said, he did not wish to be understood to be an advocate of ovariotomy except in carefully chosen cases. Of a very large number of cases seen in his hospital services, in only a small proportion would this operation be thought of and in those only after thorough treatment for a year by galvanism, etc. If after that time there is no improvement it seems to be our duty to consider the

² See page 359 of the Journal.

operation especially in the case of those who work and cannot afford to lie idle. He would advocate conservatism first and then be prepared to do something rather than to fold our hands and do nothing.

DR. E. J. FORSTER showed a hair-pin which a patient had introduced into the uterus for purposes of abortion. He had introduced a sponge tent to dilate the cervix in order to remove the pin, and on taking out the tent, the hair-pin shot out onto the floor. It had been there four weeks.

DR. F. H. DAVENPORT showed some pus tubes he had removed that morning. The patient was first seen a year ago and the probable diagnosis of purulent salpingitis made at that time. She refused operation and gained twenty-three pounds under treatment. Lately she began to have pain with an increase in size of the tubes and an escape of pus into the peritoneal cavity and he operated at once.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED MEETING, MARCH 21, 1892.

THE President, DR. S. B. W. MCLEOD, in the Chair.

DR. J. LEWIS SMITH read a paper on

RECENT INVESTIGATIONS RELATING TO THE PREVENTION OF DIPHTHERIA AND SCARLET FEVER.

The germ of scarlet fever, he said, though its precise character had not as yet been demonstrated, surpassed that of every other disease with the exception of small-pox in its tenacity to objects, its portability and its activity and virulence. Having given instances illustrating these points, he said that in cities, there was reason to believe that the contagion was often conveyed by means of books which children, ill with scarlet fever, handled. The most recent investigations tended to show that the disease was controlled, and its spread prevented in a marked degree by the frequent antiseptic treatment of the fauces from the commencement of the attack. The secretions from the faecal surface and the faecal surface itself contained numerous microbes, of which the streptococcus was far the most abundant, and was presumably an active agent in producing the inflammation. This streptococcus, as Professor Hutinal, of Paris, had claimed, was apparently identical with that which occurs in suppuration processes, the Rosenbach pyogenic streptococcus. Since these dangerous microbes were located primarily upon the faecal, nasal and post-nasal surfaces, the early and repeated use of germicidal applications was now considered of the first importance, and this consideration undoubtedly enlarged the scope of prophylaxis.

As regards diphtheria, it was now almost universally acknowledged that the Klebs-Loeffler bacillus was the specific germ of the disease, and Brieger and Fraenkel had demonstrated in diphtheria a virulent toxine which was believed to be elaborated by this microbe, which recent investigations had shown to be of itself comparatively innocuous. These observers also showed that slight variations in the chemical composition of the toxine named destroyed its virulence. It was true that the fact, that sometimes on the mucous membranes of perfectly healthy individuals a benign bacillus was discovered which as regards appearance and behavior was not distinguishable from the Klebs-

Loeffler bacillus, tended to militate against the efficiency of the latter in the production of diphtheria; but this was now explained by the hypothesis that the benign bacillus in question was simply the Klebs-Loeffler bacillus deprived of its virulence. As confirming this supposition, it might be mentioned that the benign bacillus was sometimes found in those who had recently recovered from diphtheria. While scarlatins and other diseases were capable of producing pseudo-membranous exudations, Dr. Smith believed that no case should be designated as true diphtheria unless it was produced from the Klebs-Loeffler bacillus.

Certain French authors, however, had pointed out that, while the phenomena observed in diphtheria were mainly attributable to the poison elaborated by the Klebs-Loeffler bacillus, we should not forget that other morbid agents were also concerned in their production, such as the streptococcus and the staphylococcus, which were often found in internal organs where the former did not exist.

Having related instances to show the extreme contagiousness of diphtheria and the tenacity of its germs, Dr. Smith alluded to the fact that damp, foul places such as sewers either have the power to propagate the Klebs-Loeffler bacillus or by means of the emanations from them to convert the benign bacillus mentioned into the latter. In this way, was no doubt to be explained the constant prevalence of diphtheria in large cities like New York where, notwithstanding all precautions, people were often exposed to the contamination of sewer gas. Another mode of communicating diphtheria was by means of walking cases. The disease was often so mild in character as to escape notice, and thus children in schools, in city conveyances, in churches and in dispensaries were exposed to the contagion. Diphtheria had also been known to be communicated by milk and frequently through the agency of domestic animals, especially the cat.

Although much had been learned concerning the prevention of this disease, it was still the cause of a heavy mortality in all civilized countries. How much could be accomplished by intelligent prophylaxis, however, was shown by the wonderful results obtained by Graucher, who succeeded in preventing a large number of children, who were sent to diphtheria hospital wards under a mistaken diagnosis, from contracting the disease. Out of one hundred and fifty-three such instances not a single case of diphtheria occurred. Graucher's method of preventing the spread of diphtheria included a metallic screen placed about the patient's bed, the wearing of blouses by all nurses and orderlies, the washing of all napkins, spoons, and other articles used by the patients in a solution of one ounce of bicarbonate of sodium to the pint of water, the daily disinfection of the nurses' blouses, and the repeated washing of the nurses' persons in solutions of corrosive sublimate or carbolic acid. The success attending these prophylactic measures justified the belief that it is possible in almost every instance to limit each attack of diphtheria or scarlet fever to one or two cases. Dr. Smith advised that the physician, before entering the sick room, should take off his coat and waistcoat, and put on a blouse or envelope himself in a sheet. Most medical men, he said, in examining the fauces sat in front of the patient, and thus when coughing was excited they were exceedingly likely to receive infectious matter upon their persons. Repeated instances had been reported in which the disease was

conveyed in this way. In order to avoid this, he should sit beside or behind the patient. Another excellent way was to make the examination through a pane of clear glass. Upon leaving the sick room, he should wash his face, head and hands in a solution of corrosive sublimate or other antiseptic. All articles not actually required for the comfort of the patient should be removed from the room as soon as the diagnosis was made.

In regard to other children in the family, Dr. Smith said that he had formerly contented himself with sending them away. But this was not enough. Their entire persons should be bathed in bichloride solution, and a complete change of clothing made. Every three hours for a week their mouths and fauces should be washed with a solution of peroxide of hydrogen. It was also advised that after seeing a case of diphtheria or scarlet fever the physician should not visit another child for at least one or two hours. The Health Board of New York was to be commended for the excellent work it had accomplished in the last five years. Smallpox, which was formerly quite prevalent, had been practically stamped out: and it was no doubt true that the other infectious diseases were much less prevalent than they would be but for the precautions enforced. It was probable, however, that scarlet fever and diphtheria would never be entirely suppressed. The conditions of tenement-house life were such as to constantly perpetuate infection, and notwithstanding all that had been accomplished, it was a common thing for the brothers and sisters of children ill with diphtheria to attend the public schools. At the meeting of the American Pediatric Association, in 1890, Dr. Auguste Caillé had proposed very wisely that each schoolhouse should be provided with a sanitary inspector, one of whose duties it should be to examine daily (without using a tongue-depressor), the throat of every child when it came to school in the morning. In case of any trouble being found the child could be at once sent home, with a note addressed to the parents stating that it was sick, and that the family, or dispensary doctor should be at once communicated with. The late Dr. Wm. Budl, of England, stated in the *British Medical Journal*, in 1869, that he had never known scarlet fever to extend beyond the house where a case occurred. The means he used for preventing the spread of the disease were, (1) separation, and (2) disinfection.

Dr. Smith said it was his practice to have the bedstead, floors, etc., of the sick room washed every day with bichloride solution, and also to use the following disinfectant: one ounce each of oil of eucalyptus and carbolic acid were mixed with eight ounces of turpentine and of this two tablespoonsfuls mixed with a quart of water were allowed to simmer continually near the sick child. The vapor thus produced, while strong and pungent, was not unpleasant, and he believed that it had a decidedly prophylactic effect. Mr. Charles Smith, now of Australia, employed a similar, though rather stronger solution, with which he saturated cloths which were placed on paper on the bed, and he stated that since he had adopted this plan he had never seen paralysis follow a case of diphtheria. This corresponded also with his own experience in cases in which the disinfection mentioned was resorted to. In scurffata, the skin should be anointed every three hours, until desquamation was completed, with a mixture consisting of one drachm each of oil of eucalyptus and carbolic acid dissolved in seven ounces of sweet oil.

As a spray in both scarlet fever and diphtheria peroxide of hydrogen had a decided prophylactic effect. It should be used in the strength of one part to two or three of water for the fauces, and of one part to six for the nostrils. Of course, the most careful disinfection of the bedding and all utensils used was called for.

Dr. Smith did not believe that sulphur fumigations after a case of infectious disease were of much value, though he thought that Dr. Squibb was right in stating that they were rendered much more efficient when moisture was secured by burning the sulphur over water. A more effective plan, in his opinion, was to wash the bedstead and floor with bichloride solution, and to paint or whitewash the floors and ceiling.

DR. C. A. LEALE considered that diphtheria was the most terrible scourge with which the medical profession had to deal, and that its prevention in large cities was attended with the most serious difficulties. The conditions existing in our tenement-houses were such as to render them almost insuperable, and while the Board of Health was doing all that it could in the circumstances, the constantly increasing tide of immigration from Europe continually tended to increase the obstacles to be contended against. With larger appropriations, and entire freedom from political influences, however, he believed that the Board could accomplish much more than it had as yet been able to do. In the early stages of diphtheritic infection he believed that the use of fruit acids, especially lemon juice, and of the mineral acids, are exceedingly useful in preventing serious trouble. He did not agree with Dr. Smith in regard to sulphur fumigations, but believed that sulphurous acid when combined with moisture was a most efficient disinfectant.

DR. HEPLICH advocated the establishments by the Board of Health of hospitals, to which the children of the poor when suffering from diphtheria or scarlet fever should be taken, even against the will of the parents. This seemed to him the only efficient way of controlling these diseases, and he hoped that in time the public would be educated up to this idea.

Recent Literature.

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By WILLIAM OSLER, M.D., Professor of Medicine in Johns Hopkins University, etc. New York: D. Appleton & Co. 1892.

This volume exhibits originality at the very beginning, inasmuch as there is no preface. The author does not take us into his confidence as to his motive for adding another book on the "Principles and Practice of Medicine" to those which have preceded his. He does not tell us whether it is because there were too many good ones or too many bad ones; whether the publisher tempted him, or his University demanded it; or whether it was simply that he had noticed that "they all do it." He skips into the public presence without a word, but with a sort of air which suggests: Here I am! Take me, or leave me, but you had better do the former! He had probably heard that good wine needs no bush; and as he has written a good book, with an excellent dedication and some sound

aphorisms from the Greek on the first sheet, it mattered less about his motives. At any rate, after the table of contents and a list of charts and illustrations, we find ourselves plunging immediately into typhoid fever, which heads Section I, (on "Specific Infectious Diseases,") of this royal octavo volume of 1,080 pages. No preliminaries are devoted to such abstract subjects as nosology, symptomatology, etiology, inflammation, fever, etc. In this respect Osler's book resembles Strümpell's.

This first section of specific infectious diseases has thirty sub-headings, and embraces more than a quarter of the book. It is in the title of the section and in dealing with the description of the diseases included under this section that the work of the bacteriologist and the changes of the last ten years become apparent. It is, perhaps, needless to say that in this important department this book exhibits discreet judgment and an acquaintance with the subject well up to date.

The second section is on constitutional diseases; there are twelve sub-headings, the most important of which are rheumatism, gout and diabetes. Then follow the usual sections based upon an anatomical classification—diseases of the digestive, respiratory and circulatory systems; of the blood, of the kidneys, of the muscles. Then comes a polymorphous section devoted to the intoxications, sunstroke and obesity; and lastly a section covering diseases due to animal parasites.

The sections on specific infectious diseases and on diseases of the nervous system are the most considerable of the book, making up together about one-half of its contents, and considering the intrinsic importance of the subjects as well as the advances made in them in recent years, this is as it should be. The comparatively short section on diseases of the blood and ductless glands is concise but thorough, and, though most of the charts inserted through the volume are clear and distinct, the blood charts seem to us particularly pleasing and graphic. In the treatment of essential anæmia the author relies greatly upon rest in bed.

With the limited space and time at our disposal, we cannot undertake to call attention to all that is good or to affirm that there is nothing which might not be better in Dr. Osler's book. His attitude in regard to a few important and debated points may be noted. For the treatment of typhoid fever he is a very temperate advocate of the Brand method for institutions, though personally sympathizing with those who designate it as entirely barbarous. The employment of medicinal antipyretics he abandoned some years ago; the choice for him, if they are used, lies between antifebrin and antipyrine, with a preference for the former; nothing is said of phenacetine, which he apparently regards simply as an analgesic.

The quotation from Hirsch, "Die Geschichte des Typhus ist die des menschlichen Elends," introduced by the author as tersely stating the etiology of typhus fever, should be before the eyes of our immigration commissioners and quarantine and sanitary officials at the present time.

Dr. Osler admits at once the existence and the rarity of pulmonary syphilis. In the treatment of secondary syphilis the use of gray powder with Dover's powder by the mouth, is, we are glad to note, warmly endorsed. In regard to the question of syphilis and marriage, he thinks the family physician should insist upon the necessity of two full years elapsing between the date

of infection and the contracting of marriage, and there should be at least one year of complete immunity from all manifestations of the disease. He is an advocate of licensing, but to the unmarried man he recommends continence in alluring terms.

Dr. Osler's remarks upon the tuberculin treatment are moderate and judicious. He points out that we are at present in the reaction wave, and that it will probably be several years before we can speak with decision upon the true position of this remedy. The importance of bacteriological examinations in suspected tuberculosis and suspected malaria is strongly insisted upon.

Cases of leprosy, our author states, should be isolated, although the risk of catching the disease is "extremely slight." We are glad to notice that credit is given Beavan Rake for studies in this disease carried out at the hospital in Trinidad.

The pages on perityphlitis and appendicitis give the latest conclusions as to the pathology and management of these perplexing cases.

The pages upon malignant endocarditis reflect the author's Gulstonian lecture, and are, of course, excellent.

Our author seems somewhat sceptical, or at least open to further proof, as to the causation of arsenical poisoning by absorption from wall-papers and fabrics.

The style in which Dr. Osler's book is written is clear, concise and at the same time animated. The type is very good. The finish of the paper is excellent, but the texture is not strong, and we doubt whether it stands well the strain of the eager student who will certainly want to use it often and much, or the inadvertence of the busy practitioner who will sometimes consult it hastily. The book has evidently been "trained down" as much as possible to secure handiness without sacrificing even more important essentials.

We should be glad to be able to think and speak as highly of every medical book presented for review, as we can of this. In truth, had our enemy written it, we should be unable to find much consolation in his commitment.

Atlas of Clinical Medicine. By BYROM BRAMWELL, M.D., F.R.C.P., Edin.; F.R.S., Edin. Assistant Physician to the Edinburgh Royal Infirmary, etc., Vol. I, Parts I, II and III. Edinburgh: Printed by T. & A. Constable, at the University Press. 1891.

We justly reproach ourselves with so tardy a notice of this superb Edinburgh publication, though the delay enables us to form our judgment upon more than one fasciculus and to assure ourselves that the promise of the first part has so far been steadily realized.

As the announcement suggests, the work might, perhaps, be better styled "An Illustrated Treatise on Clinical and Systematic Medicine." The letter-press is worthy of the plates, beautiful and accurate as they are, and Dr. Bryton Bramwell's name is a guarantee of accurate, discriminating and intelligent work in the word-description which supplements the illustration of the artist and the photographer.

The plates are for the most part original, and copies of the water-color paintings and photographs in the possession of the author; they are colored, black and white, and photographavre plates, measuring 14½ by 10½ inches. The original paintings have been drawn from life under the supervision of the author.

The first and second fasciculi contain 48, and the third 44 folio pages. Each fasciculus is announced to contain at least 32 folio pages. Each annual volume will contain four fasciculi and about 30 plates. It is expected to complete the work in three annual volumes containing 90 plates. A volume will not be broken, but subscriptions may be made to single volumes. The price of the first volume to original subscribers is £1. 11s. 6d.

The first fasciculus is taken up with myxedema, sporadic cretinism, and Friedreich's ataxia. The first two subjects are especially interesting at the present time in connection with the experiments which are being made with transplantation of the thyroid gland.

Among the illustrations of Friedreich's ataxia we notice a reproduction of the striking case described by the late Dr. Everett Smith in these columns.

A very beautiful plate showing a typical case of lymphadenoma and one of melancholia with fear finish the first fasciculus.

The plates of the second part are on Addison's Disease and Hodgkin's Disease, with supplementary plates of molluscum fibrosum, xeroderma pigmentosum and mania. The plates of the third part exhibit progressive unilateral atrophy of the face, chronic progressive bulbar paralysis, ophthalmoplegia externa, and additional plates on molluscum fibrosum and xeroderma pigmentosum.

We regret to learn that the recent epidemic of influenza selected the author as a victim, and hence a slight but unavoidable delay occurs in the issue of Parts III and IV. We sympathize with such a visitation and must plead the same excuse for our own shortcomings. We must, however, remind the author that he is to blame if we are impatient for more.

The press-work of these pages does credit even to the house of Constable.

Ninth Biennial Report of the State Board of Health of Maryland, for the two years ending, December 31, 1891. Pp. 381. Annapolis, 1892.

This Report of the operations of the State Board of Health of Maryland is conveniently divided into chapters upon the following subjects: (1) Introductory; (2) Review of the Operations of the Board; (3) Quarterly and Special Reports; (4) Correspondence; (5) Life History of the State and Special Diseases; (6) Adulteration of Food; (7) Mortality and Vital Statistics.

During the past two years the Board has accomplished much valuable sanitary work, under the direction of its efficient Secretary, Dr. Chancellor. Several thousand circulars upon sanitary subjects have been distributed. Attention was called to the need of a properly equipped hygienic laboratory. Good work has been done in the line of food inspection. A special report follows upon the pollution of Lake Roland and upon certain sources of water-supply, notably that of Cumberland, where 587 cases of typhoid (or as it is termed in the Report, entero-miasmatic) fever occurred with 52 deaths.

In the chapter upon the Life History of the State, many valuable suggestions are presented as to the management and control of infectious diseases; but the paragraphs upon alcoholism might as well have been omitted, since the oft-quoted and fallacious statistics of the inquiry of the British Medical Association have already been shown to have no bearing whatever

upon the subject. Notwithstanding the fallacy of the statement that "hard drinkers and drunkards have an average life of 52 years and 14 days, and total abstainers 51 years and 80 days," every trade journal devoted to the liquor interest in England and America had appropriated the statement for its own ends. And yet Dr. Owen, the author and compiler of these remarkable statistics, virtually retracted them at the recent Congress of Hygiene at London in these words: "I have been misquoted frequently, and have never arrived at the conclusion, indicated by the figures, that the total abstainer's life was a worse one than the chronic drunkard's."

Insomnia and its Therapeutics. By A. W. MACFARLANE, M.D., F.R.C.P.E., etc. 8vo, pp. v. 298. New York: Wm. Wood & Co. 1891.

The work before us can hardly be called satisfactory. In his effort to be comprehensive the author has included almost every affection in which insomnia may be a symptom, apparently forgetful of the famous advice of the judge to the young lawyer, that this court may be expected to know a little something. Few, even among the laity, need to be reminded that the flea or the mosquito can produce insomnia, nor is insomnia usually the distressing symptom in acute cystitis. The result is that the author has written what is practically a treatise on general medicine, and, although there is a good deal that is suggestive in the work, neither his pathology nor his therapeutics can be considered as up to date. We find frequent mention of cerebral hyperemia and plethora, for example. In his therapeutics the author is an advocate of hypnotics, and in many respects his advice is hardly sound. One half the cases of functional insomnia are due, he believes, to an inherent instability in the cerebral textures, and, in 273 cases, he finds the chief cause to be neurasthenia, worry, gout, overwork, menopause, dyspepsia, alcoholism and senility.

Pulmonary Consumption, a Nervous Disease. By THOMAS J. MAYS, M.D. Detroit: George S. Davis. 1891.

From a consideration of the published cases in which phthisis and vagus disease coexisted, Dr. Mays has arrived at the conclusion that pulmonary consumption is a neurosis in which the vagi are primarily involved. Among other conclusions which he has drawn may be mentioned that "there is no testimony whatever to show that infection occurs through houses or food" and "that diabetes, beri-beri, leprosy and probably lupus and pellagra, are intimately associated with pulmonary consumption, because fundamentally the evidence appears to show that they are nervous diseases." We fear that to the average reader the evidence and reasoning on which these results are based will not seem absolutely satisfying, and doubt will arise if some cases of phthisis do not exist which are due to other than nervous causes. The therapeutics based on such a pathology do not seem to differ greatly from those advocated by eminent men who still fatuously cling to a belief in the bacillary theory.

Nursing in Abdominal Surgery, and Diseases of Women. By ANNA M. FULLERTON, M.D. Philadelphia: P. Blakiston, Son & Co. 1891.

This book contains the lectures delivered to the pupils of the training-school for nurses connected with the Woman's Hospital of Philadelphia. It supplies

not only what is too often looked upon as the only knowledge necessary for a nurse, the actual care of the patient, but also in addition such facts as will enable the nurse to be an intelligent and competent assistant to the surgeon. Some of these are preparation of room, sterilization of instruments, anaesthesia, names and uses of instruments, etc. In fact, many of these directions might be very profitably studied by the average medical student.

The book ought to be a useful one, and seems well adapted for its purpose.

Principles of Surgery. By NICHOLAS SENN, M.D., Ph.D., Professor of the Principles of Surgical Pathology in the Rush Medical College, Chicago, Ill., etc. Philadelphia: F. A. Davis. 1891.

A captions critic might be inclined to question the accuracy of the title of this book, for it deals more with the principles of surgical pathology, as pathology is generally understood. It is a most satisfactory work. Dr. Senn's indefatigable labors in the field of experimental surgery have entitled his work to most careful attention; and this book, treating as it does of the fundamental principles of modern surgery, is of great interest.

Dr. Senn discusses at length the processes of inflammation, of necrosis, of suppuration, septicæmia, pyæmia, erysipelas, tetanus, hydrophobia, surgical tuberculosis of the various organs, actinomycosis hominis, anthrax and glanders. Each is considered in a very complete manner; full attention being paid, not alone to the pathology, but to the etiology, symptoms, diagnosis, prognosis and treatment. His description of tetanus is masterpiece; and while the book will not be attractive to the general practitioner who simply desires therapeutic points, to the thinking surgeon the book is indispensable.

The reader here finds subjects presented in new lights; and occasionally one is inclined to question the truth of the deductions, yet, in this element lies a great value. It is full of thought and experimental research, and is an addition to any library. The print is too small to be read easily, and the binding is defective.

Surgical Diseases of the Ovaries and Fallopian Tubes, including Tubal Pregnancy. By J. BLAND SUTTON, F.R.C.S. With 119 engravings, and five colored plates. Philadelphia: Lea Brothers & Co.

It is a pleasure to review a book of this character; first, because of the great and growing importance of the subject at the present time; and, second, on account of the admirable way in which the subject is treated. There is no book which so clearly presents the pathology of the branch of gynecology, nor any which combines so happily original research, and a just estimate of the work of others.

It is divided into four parts: (1) Diseases of the ovaries; (2) Diseases of the Fallopian tubes; (3) Tubal pregnancy; (4) Methods of performing operations for ovarian and tubal disease.

The greater part of the book is occupied with the pathology of the subject, only the last fifty odd pages being devoted to the methods of operating. This is fortunate, for our knowledge of the methods of origin and growth of ovarian tumors, the changes which occur in the mucous membrane of the Fallopian tube as a result of disease, and the causes of tubal pregnancy

lags far behind our knowledge of how to treat these conditions. This work is therefore a very welcome addition to the literature of this subject.

The illustrations, most of which are original, add much to the elucidation of the text.

A Treatise on Bright's Disease of the Kidneys: Its Pathology, Diagnosis and Treatment; with Chapters on the Anatomy of the Kidney, Albuminuria and the Urinary Secretion. By HENRY B. MILLARD, M.A., M.D., etc. With numerous original illustrations. Third edition, revised and enlarged. New York: William Wood & Co. 1892.

There are a number of important changes in this new edition of Dr. Millard's well-known book. The author has re-written the chapter on Tests for Albumen in the Urine. He still considers his own test, that with phenic-acetic acid and potash, the most delicate, certain and practical, especially for albumina minima. The other re-agents considered by him, are: nitric acid, heat, the nitric-magnesian test (Roberts), and Tauret's with the double iodide of mercury and potash.

New matter has been added upon the albuminuria of pregnancy, the ocular lesions and mental disturbances attendant upon Bright's disease, the use of anesthetics in nephritis, curability, the dietary, the use of mineral waters, and the treatment.

The author has renounced his former opinions and conclusions recognizing the existence of "physiological" or "normal" albuminuria. A revision of the material upon which his previous position was based, in addition to the consideration of extremely careful and accurate experiments made by Lecorché and Talaman, has led him to the present conclusion that albumen, when secreted by the kidneys, can never be surely predicted to exist in health; that it is never physiological but always pathological and dependent upon histological changes in the kidneys.

The Mediterranean Shores of America—Southern California: Its Climatic, Physical, and Meteorological Conditions. By P. C. REMONDINO, M.D., etc. Fully illustrated. Philadelphia and London: The F. A. Davis Co. 1892.

The author writes from San Diego, but seems to write impartially of the whole of Southern California, without any attempt to promote any particular locality. He considers the nice adjustment between temperature and relative humidity — the humidity diminishing as the temperature increases and *vise versa* — to be, at once, the distinguishing peculiarity of the region of which he writes, and the key to its beneficial effects. There is, we believe, much truth in this statement.

The author divides the climates of Southern California into six distinct classes, all having a therapeutic value and application, as follows: (1) A purely insular climate; (2) a peninsular climate; (3) a coast climate; (4) a foot-hill and valley climate, 200 to 2,500 feet elevation; (5) a mountain climate, 2,500 to 9,000 feet elevation; (6) a desert climate, from 360 feet below sea-level to 2,500 feet elevation.

This book will be found of interest and of service to those who advise others about climates, or to those thinking of going themselves to Southern California.

The Mayor of Barfleur (France) has forbidden the wearing of low-neck dresses by the women of the commune, as being prejudicial to peace and social morality.

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RECENT RESEARCHES ON BILIARY INFECTIONS.

THE bacteriology of biliary infections has been but recently studied.

Netter¹ claims priority in investigations of this kind, he found various benign and pathological microbes in morbid states of the bile and bile-passages. Naunyn and Duclaux, Vignal, Gilbert and especially Ernest Dupré have still more recently done good work in this department of experimental inquiry.

Normally, like pancreatic juice and freshly voided urine, the bile is aseptic. Though the common bile-duct opens into a cavity which is itself markedly septic (the duodenum), the bile-ducts, like the bile, are normally free from microbes. Only the entrance of the excretory canal is infected; the mucus and epithelium lining the ducts do not constitute a good culture field for germs, and bile is itself toxic to microbes.

In certain diseased conditions, the opposing barrier is broken, and microbes of various kinds, the staphylococci, the streptococcus pyogenes, the bacterium coli, the typhoid bacillus, or the bacillus tuberculosus may penetrate the biliary passages and the hepatic parenchyma from the duodenum, and produce an infectious icterus of mild or grave nature, according to the kind of resistance offered by the organism and the quality of the infectious agent.

The liver may become infected in four different ways: (1) through the peripheral lymphatics (but this is a rare event); (2) through branches of the vena portae which may bring pathogenic germs from the intestine as occurs in the abscesses of dysentery; (3) by the hepatic artery, as when, in the course of general septicæmia, the microbes of suppuration are conveyed in the arterial blood to the parenchyma of the liver, constituting the miliary abscesses and metastatic purulent collections of pyæmia; lastly, by the bile-

ducts, and this infection may come about by two orders of lesions, mechanical and septic.

Nowhere have we found so complete and so clear an account of these infections as in the lately published treatise of Ernest Dupré.²

The mechanical lesions of obstruction causing infection are foreign bodies, calculi, compression of the bile-ducts by tumors, extrinsic or intrinsic, etc. The septic lesions are inflammatory, catarrhal, or suppurative, and constitute the angiocholites.

In infectious secondary to mechanical lesions, the obstruction produces stagnation, then alteration of the bile, which becomes thick (like mud), and mal-nutrition and degeneration of the protective epithelium of the ducts; the medium is favorable for microbes if they can only obtain access thereto. When the obstruction is extrinsic, the compressing agent, which may be a tumor or a hydatid cyst, while opposing an obstacle to the outflow of bile, also presents a barrier to the passage of infecting germs upwards. It is quite possible, as Dupré has proved by numerous experiments on animals (tying the choledochus under rigidly aseptic conditions), to have a completely aseptic obstruction of the bile-duct. The symptoms will be icterus by retention, augmentation of volume, then shrinkage of the liver and gall-bladder, without fever or signs of local inflammation. Anatomically, there will be mechanical dilatation of the bile-ducts, vascular engorgement, then cloudy tumefaction or stenosis of the hepatic cells; these cell-degenerations being probably dependent on the irritation exercised on the cells by the resorbed bile. It is probable that in nature the conditions are seldom favorable for a continuance of asepsis; sooner or later the appearance of fever of a remittent or intermittent character and the signs of local inflammation give evidence that microbes have penetrated either the bile-ducts or the gland tissue proper.

The foreign bodies which may by their presence in the bile-duct cause obstruction and favor infection are generally of intestinal origin; worms (ascarides distomata), cherry-stones, various seeds, etc. Frerichs, in 1877, reckoned thirty-seven cases of biliary helminthiasis. If such bacteriferous causes of infection are rare, this is not the case with calculi, which when lodging in some part of the duct, cause biliary stasis by retention, dilatation of the ducts, ulcerative folliculitis of the mucosa and diffuse peri-lobular sclerosis. The more cachectic the patient from any cause (alcoholism, malaria, tuberculosis, senescence), the less feeble the resistance, and the more speedy and thorough the infection. The form of the calculus has its rôle in the biliary infection: thus sharp points and edges wound the epithelium of the ducts and favor the invasion of bacteria. Numerous small calculi in the choledochus or cystic duct are much more likely than a large solitary calculus to multiply points of contact with the mucosa and occasions of traumatism.

(To be continued.)

¹ Progrès Méd., 1886; Archiv. de Phys., 1886.

THE VITAL STATISTICS OF MASSACHUSETTS
FOR THE YEAR 1890.¹

WITH a census population of 2,238,943 in Massachusetts, of whom 51.42% were females, there were 57,777 births, 20,838 marriages, 654 divorces, and 53,528 deaths in 1890, showing a birth-rate of 25.81, a marriage-rate of 9.31, a death-rate of 19.44, the averages for five years (1886-90) being 25.8; 9.3; 19.4.

The excess of births over deaths in the five years ending in 1890 was 68,298, or 205,409 less than the increase in population in the same time, showing the effect of immigration.

The average rate of increase of the population (excess of birth-rate over death-rate) is about half that of Germany, England and Scotland, somewhat more than that of Ireland and more than double that of France. The proportion of children born of native parents has decreased from 41.62% in 1881, still further to 34.82% in 1890. The illegitimate births were 2.03% of all births.

The average age at marriage was, of men, 28.8 years; of women 25.5. Marriages of native-born were 46.11% of the total; of foreign-born 31.50; of one native and one foreign-born 22.32, the latter showing a steady increase.

From birth to five years of age, the deaths per 1,000 living were between 60 and 70; from ten to fifteen 3.7; and again from seventy to eighty over 70. The death-rate of males like the birth-rate somewhat exceeds that of females.

The registration of deaths shows only 1.19% where the causes of death were not returned; and 519 deaths were reported as from unknown or ill-defined causes, not including 175 deaths from dropsy, 12 from ascites, 161 from infantile, 700 premature and 1,235 from paralysis.

The mortality from the infection-diseases, 3.61 per 1,000 of population, was considerably less than for either of the previous three years 4.09, 4.14, 4.14, in spite of the excessive number of deaths from influenza, which caused 411 deaths, as compared with 27 in 1889 and 11 in 1888. There was only one death from small-pox. For 1890 and the previous four years in order the rates were, per 1,000, measles .050, .088, .112, .234, .067; scarlet fever .087, .095, .259, .305, .170; diphtheria and croup .726, .140, .942, .848, .802; cerebro-spinal meningitis .070, .077, .088, .066, .053; whooping-cough .162, .159, .126, .119, .139; typhoid fever .373, .459, .485, .475, .412; erysipelas .078, .091, .109, .095, .090; influenza .184, .014, .006, .009, .007; diarrhoeal diseases 1.52, 1.61, 1.60, 1.56, 1.42; ague and remittent fever .027, .039, .033, .024, .014; pneumonia 1.80, 1.77, 1.91, 1.72, 1.46; hydrocephalus caused 16 deaths as compared with

14 in 1889, 2 in 1888, and none in the previous two years.

The decrease in reported mortality from pulmonary consumption continues, 5,791 deaths were returned or a rate of 2.59 as compared with 3.39 in 1871, or 13.3% of all deaths, which is the least ever recorded in our State.

The death-rates from brain diseases (apoplexy, softening of the brain, paralysis, insanity, cephalitis and brain disorders) have increased, as given by census years, from 1.21 in 1860; 1.43 in 1865; 1.43 in 1870; 1.64 in 1875; 1.70 in 1880; 2.00 in 1885 to an estimated rate of 2.2 in 1888 and 1.96 in the census year 1890.

The reported death-rate from cancer has steadily increased from .33 per 1,000 living in 1871 to .62 in 1890, partly a result, probably, of better diagnosis. In a similar way part, at least, of the great increase in kidney diseases (27 deaths in 1851 to 1,273 in 1890) and all the decrease from dropsy (390 to 175) may be accounted for.

The number of deaths reported from heart disease increased from 352 in 1850 to 3,417 in 1890, while the ratio to the living population increased from .354 per 1,000 to 1.58.

Since the beginning of our registration the increase of the urban population has been steady and rapid. In 1842, the population of towns having more than 10,000 inhabitants (of which there were only six) was 24% of the total population, while in 1890 the population of the twenty-eight cities was 61.3% of the total population. The facts bearing upon the distribution of the people in the State and vital statistics of the cities and rural population are most interestingly brought out in tables 130 and 131. The average death-rate for the twenty-eight cities, for the last five census years, is 21.4, as compared with 17.5 in the rest of the State, but the birth-rates are respectively 28.4 and 22.0.

An increase of deaths from illuminating-gas poisoning has very quickly followed the introduction of water-gas. The number of these deaths, 11 in 1890, was greater than the whole number from that cause in Massachusetts, for the entire period of nearly fifty years previous to the introduction of that dangerous agent.

THE TREATMENT OF TYPHOID FEVER.

As long as typhoid fever is as widespread and as frequent a disease as it is now, and has been in the past, attacking every year in all parts of the world a considerable percentage of the vigorous and active element of urban and rural populations, causing a mortality of from seven to fourteen per cent. of those attacked, and, even under the best of results where life itself is spared, incapacitating its victims for participation in the world's work for a period measured by weeks or months — so long its treatment will be a subject of great professional interest. And, notwithstanding a more intelligent prophylaxis, greater atten-

¹ Forty-ninth Report to the Legislature of Massachusetts, relating to the Registry and Returns of Births, Marriages, and Deaths in the Commonwealth for the year ending December 31, 1890, together with the Reports relating to the Returns of Licenses for Divorce and to the Returns of Deaths investigated by the Medical Examiners for the year 1890. Prepared by the Secretary of the Commonwealth, with editorial remarks by Samuel W. Abbott, M.D. Boston: Wright & Potter Printing Co., State Printers, 19 Post-Office Square, 1891.

tion to ventilation, and improved water-supplies and drainage, until all men become prudent and wise, typhoid fever, like the poor and like syphilis, is likely to be about us to offer this source of professional interest.

This winter is no exception to others in bringing its quota of papers, of books, and of discussions upon this important subject. In fact, it may be said that such contributions have been rather more numerous than usual. The cold-water treatment by Brand's and other methods is receiving more consideration in our cities, and is being tested in some of the large hospitals. We shall await the results, after a sufficient trial has been made with such material as presents itself at our hospitals and under the conditions which prevail there, with some curiosity. The aim, of course, should be to get the actual results of a given method, not to prove a given method to be either a good or a bad one. Typhoid fever in our hospitals is a different thing from so-called typhoid fever in a German army corps under the charge of a disciple of Brand, and the facilities for service differ. We do not know positively how far such an army corps is more prone to have typhoid as well as more prone to recover from it, than another corps similarly situated and of the same number of men under different medical management.

Some of the Philadelphia daily papers were much occupied last autumn by the use of Brand's method in the German Hospital there; we have published in our last issue and in this, a paper by Dr. A. L. Mason (which was read at one of our societies) on typhoid at the Boston City Hospital; the New York *Record* publishes in its last issue an abstract of a discussion of the treatment of typhoid fever, held at the Practitioners' Society of that city; and we have before us an octavo volume of two hundred pages, by Dr. James Barr, of Liverpool, upon treatment by continuous immersion for a week or ten days at a time, in a tank of water at a temperature of from 90° F. to 98° F., according as the body temperature of the patient is above 100° F., or approaches normal. Dr. Anderson, of Edinburgh, is very successful with a little perchloride of iron, administered every hour, day and night, and another practitioner has admirable results from a table-spoonful of a one per cent. solution of chloroform hourly, day and night.¹

The general sentiment at the Practitioners' Society seemed to be in favor of the use of the tub, and represented a moderate amount of experience at St. Luke's, the New York, Bellevue, and the Presbyterian Hospitals; though all the speakers were not equally impressed with its merits. The President, Dr. G. L. Peabody, thought the only drawback to the Brand method, as a method, was its expense. It required an abundance of fresh water, sometimes ice, and at least four able-bodied men to apply it—two for day service and two for night service. An interne at the New York Hospital had devised a so-called bed-bath, a rubber sheet was put under the patient, and the depression was filled with water which was kept cold

with ice. This was superior, he thought, to cold sponging. The cold coil was serviceable, but not equal to the tub.

It is to be hoped that in the investigation of the merits of the Brand method by our American physicians, the patient as an individual entity will not be forgotten. And it is also reasonable to hope that, if cold and humid cold is positively shown to be the most desirable agent at command to diminish the trying symptoms and the mortality of typhoid fever, American ingenuity may devise some less disturbing, cumbersome and barbarous mode of application than frequent "tubbing."

MEDICAL NOTES.

SURGEON-GENERAL OF THE NAVY.—The President has appointed John Mills Browne, to be Surgeon-General and Chief of the Bureau of Medicine and Surgery in the navy, with the rank of commodore.

THE POPULATION OF NEW YORK STATE.—According to the recent State census, the population of New York State is 6,479,730. The Federal census of 1890 gave the population at 5,997,853. This increase comes principally from the cities.

NEW CHAIRS AND PROFESSORS AT THE JEFFERSON MEDICAL COLLEGE.—The Board of Trustees of the Jefferson Medical College, at their meeting, April 7, 1892, instituted a Chair of Clinical Gynecology, with a seat in the Faculty, and elected to the new Chair Dr. E. E. Montgomery, who has been for a number of years Professor of Gynecology in the Medico-Chirurgical College. They also established the following Clinical Professorships, electing Dr. F. X. Dercum, Professor of Nervous Diseases; Dr. E. E. Graham, Professor of Children's Diseases; Dr. H. Augustus Wilson, Professor of Orthopedic Surgery; Dr. H. W. Stelwagon, Professor of Dermatology, and Dr. W. M. L. Coplin, Adjunct Professor of Hygiene.

VICTOR HORSELY ON EPILEPTIC DISTURBANCE.—Victor Horsley reaches the following conclusions in summing up a recent address on the origin and seat of epileptic disturbance: "Whatever be the point which the epileptogenous agency first attacks, we must conclude that the principal seat of the disturbance of a general or idiopathic fit must be the cerebral hemispheres, and especially their cortical mantle. Further, that the condition of the cortex during the attack is one of congestion, and not anæmia; and finally that in all probability this portion of the encephalon is actually the place of origin of the disturbance."

CAUTION IN DISPENSING POISONS.—The value to a druggist of extreme care in dispensing poisonous substances was forcibly brought out in the recent Harris trial in New York. The apothecary was able to show that the assistant who prepared the medicine took from the closet morphine contained in a black bottle, labelled poison; that he weighed out the directed

¹ See Therapeutic Notes, p. 378.

quantity of the drug, and that this operation was witnessed by another assistant. The second assistant testified that he had seen the proper weight in one pan of the scale and just enough morphine in the other to balance it, and that he then noted his observation in a book kept for the purpose.

VIRGINIA MEDICAL LAW.—The Supreme Court of Virginia has decided that the medical law of the State is unconstitutional. The case before them at which this decision was given was that of a largely advertised doctor from Boston against whom complaint had been brought by the State Medical Board, alleging that he had no right to practice under the laws of the State.

THE TEETH OF SCHOOL-CHILDREN.—Last year the British Dental Association undertook the examination of a large number of school-children to determine the condition of their teeth. As a result a record was obtained of about twenty thousand teeth. They found in this number that about eighteen hundred temporary teeth required attention, while of the total number of children examined, there were only fifteen per cent. whose teeth were sound and called for no interference on the part of a dentist. A very large number of permanent teeth required filling. The authors of the report draw attention to the fact that by neglect of the teeth at the age at which children attend school, a large amount of unnecessary trouble and suffering arises in later years. A large amount of good would be done if the teeth of school-children could be systematically cared for by competent dentists.

CHANGES IN THE REGULATIONS OF THE ARMY MEDICAL CORPS.—By a recent law no medical officer in the army can be promoted to the rank of captain until he has passed an examination for promotion. Heretofore the medical officers of the army have been promoted to the rank referred to at the end of five years' service without an examination, while their less favored brethren of the navy and of the marine-hospital service have had to prepare at the end of three and four years' service, respectively, for an examination preliminary to promotion that was quite as rigorous as that given for admission into the corps. The Senate has recently passed a bill giving to officers of the medical corps holding the rank of colonel the grade of assistant surgeon-generals, and to those holding the rank of lieutenant-colonel the grade of deputy surgeon-generals. These are new titles in our army and are similar to those of the British army medical corps.

PHARMACOPEIAS.—At the recent meeting of the Naturforscher Society, Dr. Thoms mentioned some of the results of a comparison of the various pharmacopeias, made by Dr. B. Hirsch and himself, with a view to drawing up propositions for securing uniformity of composition and characters in medicinal preparations in general use. The number of names of drugs, chemicals and galenical preparations contained in all the pharmacopeias at present legally authorized was stated to be 3,762. Of these, 2,069 occur in only one

pharmacopeia, and 618 in two, whilst no more than 154, or about four per cent., are included in all. But if the calculation be limited to the six pharmacopeias issued recently, those for Austria, Germany, Hungary, Japan, Netherlands and Russia, the approximation to uniformity appears to be greater, for out of the 1,162 articles made official in these works, 224, or 19.28 per cent., are included in all of them.

NEW ENGLAND.

MORTALITY IN BOSTON.—The number of deaths reported last week was 231, a death-rate of 26.1. The deaths from consumption were 34, pneumonia 34, persons over sixty years of age 42.

A BICHLORIDE-OF-GOLD HOSPITAL.—The Massachusetts House at Lexington has been leased, and is to be used as an establishment for the "Keeley Cure for Drunkenness." This house was the one erected in Philadelphia by the State of Massachusetts at the time of the Centennial Exhibition, and in 1878 was purchased and removed to Lexington, Mass., where for some years it was used as a hotel.

BOSTON CITY HOSPITAL.—Rough drafts are being made by the city architect for enlargements of the City Hospital. The additions contemplate an entirely new group of buildings, some of one story and none over two stories in height. These buildings are to include an autopsy house, boiler house, a new morgue, and a new ward for contagious diseases—scarlet fever and diphtheria. The plans are still incomplete, subject to more or less essential modification. The new buildings will occupy the lot recently added by the closing of a portion of Springfield Street, throwing it into the hospital site, and the land on the opposite side of Springfield Street. The wards will be directly in the rear of the Nurses' Hall.

THE BABY-FARM BILL.—The bill recently reported to the Massachusetts Legislature to regulate baby-farming is recommended by many charitable societies. The bill changes the licensing power from local Boards of Health to the State Board of Lunacy and Charity, and is not opposed by the local boards. The State Board is now charged with investigating parentage of foundlings and deserted infants, and many of these children come from baby-farms. Recent developments prove the necessity of inspecting places where illegitimate infants are boarded. The bill is also designed to prevent the buying and selling of infants, and the irresponsible and reckless handling of them from one person to another for mere money gain or reward. It is not intended that any responsible person cannot help another to the adoption of an infant. The bill also permits public authorities and incorporated charitable institutions to assist in procuring adoption for such compensation toward the support of an infant as the parent may be able to pay. One important section is that proving the identity of an infant and establishing his legal rights under law; another section protects and gives temporary aid to persons in distress and unable to provide for themselves.

NEW YORK.

THE ORTHOPEDIC HOSPITAL.—At a recent mid-lent fête, lasting two days, which was given at Sherry's for the benefit of the New York Orthopedic Hospital and Dispensary, the handsome sum of \$3,200 was realized.

CRIMINAL CHARITY.—What may well be called a case of criminal charity is reported from Hackettstown, N. J. Five children in a single poor family were taken with malignant scarlet fever; of whom three died, and the other two are hardly expected to recover. In investigating the cause of the disease it was found that the family had been presented with a bundle of clothing that had belonged to a child who had died of scarlatina.

DEATHS FOR THE WEEK.—The number of deaths reported during the week ending April 2d was 874, which, while two in excess of the mortality of the preceding, was fifty-five below the average of the corresponding week in the past five years. There were no deaths from either small-pox or typhus fever; but since then one of the female nurses employed at the hospital on North Brother Island, died of the latter disease.

TYPHUS FEVER.—The three new cases of typhus fever mentioned in the JOURNAL of April 7th, were all discovered on April 4th. One was a female patient at Mount Sinai Hospital, and the other two were male inmates of institutions on Blackwells Island, one of the workhouse, and the other of the almshouse. The Mount Sinai Hospital patient, who had come from a down-town tenement house on the east side of the city, had evidently contracted the disease from some of the Russian immigrants. One of the Blackwells Island cases was traced to Bellevue Hospital, where the man had come in contact with typhus patients; but in the other one it is not known in what manner the infection was caught. In the institutions on the island the most vigorous measures were at once taken to prevent a spread of the disease, including the detention beyond their terms of sentence of a number of prisoners at the workhouse. On April 6th, a fourth case of typhus was discovered, the patient in this instance being an immigrant who had been in the country four months, but who is known to have been in communication with the infected Russians; and on the following day a fifth case was reported from Bellevue Hospital. This patient is a woman thirty years of age, and it is not known in what way she contracted the disease. According to the last reports from North Brother Island, the number of typhus patients under treatment, including these five new cases, was twenty-three.

SMALL-POX.—A number of cases of small-pox have been discovered during the past ten days. Four of these were reported on April 5th, and no less than eight on April 7th, in different parts of the city. It was ascertained that two of the patients removed to North Brother Island on April 5th, both young

women, had been visitors at a certain low resort on Bleeker Street, and an investigation of the place, which is almost within a stone's throw of the Health Department buildings, revealed the unpleasant fact that the mistress of the house, a woman sixty-six years of age, had been ill with small-pox for nearly three weeks. During all this time the house was kept open, and men and women came and went at all hours of the day and night. The woman, who was then convalescent, professed to be ignorant of the name of the physician who had attended her and whose criminal neglect to report the case had imperiled so many lives.

Miscellany.

PUBLIC INCUBATORS.

A NUMBER of the towns in France have been studying measures to prevent the steady decrease in population in the country, and have adopted one notion that may have its application, if extended to other places.¹ It is to prevent the death of the children born before term, by establishing artificial maternities, where the use of the hatching-machine, or "couveuse," could be given to the public at a small rate or for nothing, depending on the case. Some of the cities, like Marseilles, have had a meeting of the city councils, and have passed laws regulating such establishments, and have voted certain sums towards their maintenance, and charitable persons have been asked to contribute towards them, not only as a charity, but also as a patriotic saving of soldiers to the country. An automatic *couveuse* is used, based on Dr. Auvard's model, which has been improved. Each room of the place used may contain a dozen of the hatching-machines, and one or two attendants can attend to the children placed in them. It is hoped in this way to save many infants born before term, belonging to poor people who either could not, or would not, provide such treatment. It is also thought that, raised in this way, away from the hospitals, such children will have a better chance than when put into such apparatus in the obstetric wards of the hospitals, as at present.

ASPIRATION, FROM THE PATIENT'S STAND-POINT.

DR. WALTER BENSEL describes, in the *New York Medical Journal*, his own sensations as follows: "Shortly after the blizzard of a few years ago I contracted a pleurisy with effusion, from exposure during the storm. The effusion became so large and caused such considerable dyspnoe, dysphagia, and displacement of the heart that it was deemed advisable to aspirate and withdraw some of the fluid. The first needle that was introduced was a small hypodermic-syringe needle, simply for diagnostic purposes. The only thing that I observed at this time was that the pain was much more considerable than I had supposed it would be. Soon afterward another larger-sized needle was introduced to remove the fluid, and then I noticed that there were two distinct sensations of pain, equal in

¹ Archives of Pediatrics, March.

intensity, but different in character, one as the point of the needle passed through the skin, and the other just before the fluid was reached. The second was precisely the same as the "stitch in the side" felt with a dry pleurisy. A re-accumulation of serum occurring in a few days, a needle was again introduced. Only a small amount of fluid was removed before the lumen became obstructed in some way and the needle was withdrawn and re-introduced in another situation. A few minutes before each of these two aspirations, a four per cent. solution of cocaine was injected hypodermically, so that no pain was felt as the needle passed through the skin. The same degree of pain occurred as before, however, when the needle passed through the pleura. These facts would seem to indicate that the pleura possesses nearly, if not quite, as great sensibility as the skin itself.¹²

LISTER ON ANTISEPSIS.

In his contribution to the *Virchow Festschrift* Lister reviews the history of antiseptic surgery, and gives his opinions of antisepsis as now practised, from which the following is abstracted:

The attempt to exclude microbes entirely from wounds was followed by results which more than fulfilled the highest hopes entertained of it. Yet the advance of knowledge has shown that to carry out such an idea in its entirety is on the one hand impossible, and on the other hand unnecessary. It has been ascertained that many common bacteric forms produce spores which resist for a long time the germicidal action of all known agents which could be used in operations. Hence to exclude living microbes entirely from wounds is an impossibility.

It is, on the other hand, happily unnecessary. In the first place, it appears that none of the bacteria which can cause mischief in wounds are of the spore-bearing kinds (exceptional occurrence of anthrax from infected catgut noted), while the sporeless bacteria have been shown by the most careful recent investigations to be deprived of life within a minute by a 1 to 20 solution of carbolic acid, the agent which we have always trusted for the purification of sponges and instruments, the hands of the operator, and the integument of the patient at the seat of operation.

These are the points of greatest importance to attend to during the performance of an operation, the once dreaded atmospheric dust being, as it would seem, a matter that may be disregarded. . . . The effects of micro-organisms upon the living body are greatly influenced by the dose — that is to say, by the numbers in which they are present at the seat of introduction. This seems to provide a clue to understanding how bacteria, in the attenuated and subdivided form in which they are present in the atmosphere, may be effectually disposed of by the natural antiseptic action of the blood and tissues.

The glowing accounts published by Koch two years ago of the antiseptic properties of corrosive sublimate led us to adopt solutions of that substance in place of the 1 to 40 carbolic lotion for washing and irrigating our wounds. But it turns out that the effects of the bichloride, supposed to be due to germicidal action, were in reality caused by the inhibitory power which that agent possesses even when present in extremely minute proportions. We cannot suppose that corro-

sive sublimate can have acted with germicidal effect upon the *staphylococcus pyogenes aureus*. My practice has been to abstain from irrigation during the operation, and at its conclusion to wash the wound with 1 to 500 solution, and irrigate during the application of the sutures with a 1 to 4,000 lotion.

It would be a mistake to suppose that no good can ever be done by corrosive sublimate used in the manner which I have described. Resisting as the *staphylococci* have shown themselves to that agent, there are other microbes very mischievous to wounds — such as the *streptococcus pyogenes*, the *streptococcus of erysipelas*, and the sporeless bacillus *pyocyanus*, which are destroyed by very much weaker solutions.

If we think it prudent to wash our wounds before stitching them, it will be wise for us, in the present state of our knowledge, to revert to the 1 to 40 solution of carbolic acid. This agent has been shown to be far more uniform in its action upon micrococci than corrosive sublimate.

When first I witnessed the entire cessation of suppuration as a result of relieving abscesses of their contents, and at the same time preventing the access of organisms from without, I inferred that microbes could have nothing to do with the production of the pus. This was disproved with regard to acute abscesses by Ogston, and with regard to chronic ones by Koch's discovery of the tubercle bacillus. I conceive that the acrid products of putrefaction act injuriously upon the pyogenic membrane, and prevent destruction of the micrococci by the natural antisepsis which is always disposed to operate, but, so long as the abscess is unopened, is hindered by the disturbing influence of tension caused by the rapidly accumulating pus.

THERAPEUTIC NOTES.

EXODYNE AND QUICKINE. — According to the *Pharmaceutische Zeitung*,¹ *Exodyne*, an American antipyretic, an analysis of which was made by Dr. F. Goldmann, contains approximately ninety per cent. acetanilide, five per cent. sodium salicylate and five per cent. sodium bicarbonate; alkaloids could not be detected in this mixture. *Quickine*, an American antiseptic is said to contain one part carbolic acid and 0.02 parts mercuric chloride in 1,000 parts of a mixture of alcohol and water.

TIFFOID FEVER. — Among the many methods of treating this disease, recently recommended, is that by Dr. Anderson, of Edinburgh, which consists in administering five drops of the solution of the perchloride of iron in a little water with glycerine or syrup and a few drops of the tincture of ginger, every hour, day and night.² If the patient has nausea this is relieved by four-grain doses of subnitrate of bismuth, given before each dose of the perchloride of iron.

Dr. Werner has published a *résumé* of 130 cases of typhoid fever treated by a one per cent. solution of chloroform with the greatest success.³ The patients take a tablespoonful of the solution every hour, night and day, during the acute period of the malady. When the symptoms abate the dose is diminished, but the treatment is not abandoned for several days after the complete cessation of the fever.

¹ American Journal of Pharmacy, March.

² Satellite.

³ Medical Press.

CRYSTALLIZED ARTIFICIAL CARLSBAD SALT.—According to the German Unofficial Formulary,¹ this may be made as follows:

R. Sodium sulphate (cryst.)	5 parts.
Sodium carbonate (cryst.)	2 parts.
Sodium chloride	1 part.
Hot water	12 parts. M.

Dissolve the salts in the hot water, filter the solution, and evaporate it until a film begins to form on the surface, then set it aside to crystallize. Separate the crystals from the mother liquid and transfer them (without washing them with water) to bottles. The mother liquid is to be rejected.

The resulting crystals are colorless, with a tendency to effloresce, and are soluble in 2.5 parts of water.

FAT SOAP, OR MOLLIN.²

B. Solution of potassa (18.75 per cent.)	40 parts.
Lard	40 parts.
Alcohol	4 parts.
Glycerin	15 parts. M.

Heat the solution of potassa, add the lard, and stir well during half an hour; then add the alcohol, maintaining the temperature, during twelve hours, at 50° to 60° C., and lastly add the glycerine.

DIURETIN IN CHILDREN.³—According to Demme this drug can be given to children between two and five years of age in doses of 0.50 grammie daily, and in doses of 1.50 grammes to those between six and ten. In infants under one year it is liable to cause gastrointestinal irritation. It has proved of service in the dropsy of scarlatinal nephritis as well as in that due to micturial disease, after digitalis had proved ineffectual. Its action is not cumulative, but in one case of amyloid degeneration of the liver, kidneys, and spleen its use caused an erythematous rash, accompanied with profuse diarrhoea.

Correspondence.

A NEW USE FOR AN OLD REMEDY.

CAMBRIDGE, April 7, 1892.

MR. EDITOR:—After reading an article in the *Lancet* upon a new method of intestinal anastomosis, in which Woeder's solution—compound tincture of benzoin, containing a small quantity of iodoform, was employed for sealing the line of incision, it occurred to me that this would be an excellent substance for protecting the wound in perineal operations. The success of this operation, especially when buried animal sutures have been employed, depends not only upon the aseptic precautions during the operation, but also upon the maintenance of the aseptic condition of the wound after the operation. The latter is the more difficult part of the procedure, since the urine is liable to get into the wound and do harm, and the wound may also be contaminated by discharges from the rectum. To protect it from this danger, a seal of absorbent cotton and colodion has been employed, but this will not adhere to a mucous surface and therefore is imperfect.

The compound tincture of benzoin answers this function very well. In recent work on the perineum, I have applied three coats at the time of operating, and an additional coat every time I wished to draw the urine. I have not tested it as yet in primary restoration of these parts, but think it may be useful. Applied in this manner, it protects very satisfactorily the scratch-like remains of the wound that is left after its closure with buried sutures.

Yours truly, ALBERT H. TUTTLE, M.D.

¹ American Druggist.

² Ibid.

³ Lancet.

METEOROLOGICAL RECORD.

For the week ending April 2, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer Daily mean.	Thermometer Daily mean.	Relative humidity.	Direction of wind.	Velocity of wind.	Weather.	Rainfall in inches.
S.—27	29.63	37	39	34	69	N.E.	—
M.—28	29.60	42	48	45	52	N.	9
W.—30	30.26	35	31	30	54	N.W.	9
T.—31	30.44	37	42	32	57	N.W.	12
F.—1	30.51	40	58	34	55	S.E.	4
S.—2	30.20	52	56	37	67	S.W.	18
MEAN	30.13	42	54	32	52	S.W.	12

* Cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow. † Indicates trace of rainfall. — Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 2, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Percentage of deaths from acute lung diseases.	Scarlet fever.	Diarrhoeal diseases.	Diphtheria and croup.
New York	1,515,301	874	322	14.41	22.77	3.52	1.43	.30
Chicago	1,059,850	—	—	—	—	—	—	—
Philia. (Mch. 19)	1,046,964	436	137	12.98	12.19	3.22	1.38	.57
Brooklyn	806,454	432	155	15.64	23.92	4.92	.46	.59
St. Louis	451,301	151	57	15.31	—	.53	2.12	—
Baltimore	434,477	240	74	9.24	18.48	2.94	.42	.20
Cincinnati	434,477	—	—	—	—	—	—	—
Cleveland	286,908	127	52	12.66	12.64	.79	1.58	.53
St. Paul	282,000	167	49	9.30	9.30	.55	.35	.27
New Orleans	241,500	110	53	14.56	20.02	—	2.73	.78
Pittsburg	240,000	82	27	23.18	14.64	—	1.22	.20.74
Milwaukee	240,000	82	27	23.18	14.64	—	—	—
Washington	230,362	160	32	9.60	17.00	1.00	3.00	1.00
Tampa	16,168	35	9	—	14.89	—	—	—
Charleston	16,168	11	4	—	8.85	—	—	—
Portsmouth	16,428	14	2	14.28	14.28	—	—	—
Worcester	84,633	27	19	11.11	14.80	3.70	3.70	3.70
Lowell	77,696	41	14	4.88	19.52	2.44	2.44	—
Fall River	74,308	37	12	2.70	24.30	—	2.70	—
Cambridge	70,028	34	11	15.64	26.46	2.94	2.94	.82
Providence	65,428	20	6	—	10.00	—	—	—
Lawrence	44,654	—	—	—	—	—	—	—
Springfield	44,179	—	—	—	—	—	—	—
New Bedford	40,733	23	8	4.35	4.35	—	—	4.35
Salem	30,801	13	7	—	1.49	—	—	—
Wellesley	25,709	13	4	—	1.53	—	—	—
Haverhill	24,412	15	1	—	6.66	—	—	—
Faunton	25,445	8	2	—	—	—	—	—
Glocester	24,651	10	4	—	16.00	—	—	—
Newton	24,375	4	1	—	50.00	—	—	—
Quincy	23,501	7	2	14.28	—	—	—	—
Fitchburg	22,037	3	0	—	—	—	—	—
Waltham	18,707	5	1	—	20.00	—	—	—
Pittsfield	17,281	5	2	40.00	20.00	20.00	—	—
Quincy	16,723	7	2	14.28	—	—	—	—
Northampton	16,243	10	1	—	10.00	—	—	—
Wellesport	13,947	4	1	25.00	—	—	—	25.00
Medford	11,073	6	2	—	16.66	—	—	—
Hyde Park	10,193	2	1	—	—	—	—	—
Peabody	10,158	4	2	25.00	—	25.00	—	—

Deaths reported 3,026: under five years of age 1,080; principal infectious diseases small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers 388, acute lung diseases 357, consumption 380, diphtheria and croup 164, scarlet fever 81, diarrhoeal diseases 46, typhoid fever 28, measles 18, erysipelas 15, whooping-cough 14, cerebro-spinal meningitis 11, diphtheria 10, small-pox 2, cerebral fever 2. Principal typhoid fever New York 7, Philadelphia 6, Brooklyn and Cleveland 3 each, St. Louis, Boston, Cincinnati and Washington 2 each, Pittsburgh and Cambridge 1 each. From measles New York 12, Cleveland 3, Brooklyn 2, Philadelphia 1. From erysipelas New York 5, Brooklyn 4, St. Louis, Milwaukee and Washington 1 each. From whooping-cough Philadelphia 3, New York, Cincinnati and Pittsburgh 2 each, Brooklyn, Boston and Washington 1 each. From cerebro-spinal meningitis New

York 6, Washington 2, Philadelphia, Boston and Quincy 1 each. From malarial fever New York 5, Brooklyn 3, Pittsburgh 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending March 19th, the death-rate was 24.8. Deaths reported 4,818: acute diseases of the respiratory organs 1,010; whooping-cough 109; diphtheria 14; diphtheria and croup 51; diarrhoeal diseases 36; fever 24; scarlet fever 22; small-pox (London) 2.

The death-rates ranged from 13.8 in Croydon to 33.4 in Oldham; Birmingham 23.4, Bradford 24.7, Gateshead 21.8, Hull 21.1, Leicester 21.8, Liverpool 33.1, London 24.3, Manchester 29.4, Newcastle-on-Tyne 17.4, Nottingham 20.8, Portsmouth 21.3, Sheffield 24.8, Sunderland 25.9, Swansea 2.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 2, 1892, TO APRIL 9, 1892.

MAJOR ALBERT HARTUFF, surgeon, U. S. A., granted leave of absence for six months, to take effect on or about July 10, 1892, with permission to go beyond the sea, and to apply for an extension of two months.

FIRST-LIEUT. ALFRED E. BRADLEY, assistant surgeon, U. S. A., ordered to Columbus Barracks, Ohio, for temporary duty at that station, during the illness of CAPTAIN AUGUSTUS A. DE SOFFRE, assistant surgeon, U. S. A.

FIRST-LIEUT. WILLIAM E. PURVANCE, assistant surgeon, U. S. A. (recently appointed) will proceed from Rossville, Illinois, to Fort Riley, Kansas, and report for duty at that station.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 9, 1892.

J. MILLS, BROWNE, re-appointed Chief of Bureau and surgeon-general, U. S. N.

J. C. BOYD, detailed as assistant to the Bureau of Medicine and Surgery.

M. W. BARNUM, assistant surgeon, ordered to the Naval Hospital, Washington, D. C.

HOWARD SMITH, surgeon, granted leave of absence for six months with permission to leave the United States.

CHAMP CARTER McCULLOUGH, commissioned an assistant surgeon in the navy.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, April 20th, at 7.45 o'clock.

Drs. Lena V. Ingraham and Grace Walcott, "Ulcerative Endocarditis with Death of Valve." Autopsy and specimen.

Dr. George B. Shattuck, "Malignant Endocarditis following Typhoid Fever." Autopsy.

Dr. F. C. Shattuck will open the discussion.

Dr. Myles Standish, "Ocular Headaches."

ALBERT N. BLODGETT, M.D., Sec'y, 390 Boylston St.

E. G. CUTLER, M.D., Chairman.

IOWA STATE MEDICAL SOCIETY. — The forty-first annual session of the Iowa State Medical Society will be held at Des Moines, Ia., Wednesday, Thursday and Friday, May 18, 19 and 20, 1892.

MEDICAL ASSOCIATION OF GEORGIA. — The forty-third annual session of the Medical Association of Georgia, will be held in Columbus, Ga., April 20, 21 and 22, 1892. Members of the medical profession are cordially invited to attend.

DAN H. HOWELL, M.D., Secretary, Atlanta, Ga.

RECENT DEATHS.

EDGAR PARKER, M.D., M.M.S.S., died in Bridgewater, April 9th, aged fifty-nine years. He served in the war as assistant surgeon of the Thirteenth Massachusetts regiment and was severely wounded at Gettysburg. He received the degree of M.D. from Harvard in 1861. He practised medicine in Boston until 1867, when he went to sea as surgeon of the steamship Ontario. He subsequently devoted himself to portrait painting and was an active member of the Papyrus and Boston Art Clubs.

BOOKS AND PAMPHLETS RECEIVED.

Clinical Report of Six Surgical Cases. By G. W. Cale, M.D., St. Louis, Mo.

Supracervical Dislocation. By John Ridlon, M.D., New York. Reprint. 1891.

Obstetric Problems. By D. T. Smith, M.D., Louisville: John P. Morton & Co. 1892.

Neuroma. (With report of a case.) By Edmund J. A. Rogers, M.D., Denver, Col. Reprint. 1892.

A Remarkable Case of Laryngeal Edema. By James I. Tucker, A.M., M.D., Harv. Reprint. 1892.

Seventy-eighth Annual Report of the Trustees of the Massachusetts General Hospital and McLean Asylum, 1891.

Transactions of the New Hampshire Medical Society at the Centennial Anniversary, held at Concord, June 15, 16, and 17, 1891.

Epidemic Influenza. Notes on its Origin and Method of Spread. By Richard Sisley, M.D., London: Longmans, Green & Co. 1891.

Human Monstrosities. By Barton Cooke Hirst, M.D., and George A. Pierol, M.D. Part II. Philadelphia: Lea Brothers & Co. 1892.

Contributions to the Physiology and Pathology of the Nervous System from the private laboratory of Dr. Isaac Ott, Easton, Pa. Part XI. 1891.

Progress in Surgery in 1891. The Annual Oration before the Academy of Surgery of Philadelphia. By Thomas G. Morton, M.D. Reprint. 1892.

Living Larva in the Conjunctival Sac. By R. J. Phillips, M.D., Ophthalmic Surgeon to the Presbyterian Hospital, Philadelphia. Reprint. 1892.

Ideality of Medical Science. The Evil Events of the Profession, and an Available Device for its Reformation. By Maurice J. Burstein, A.M., M.D., New York. Reprint. 1892.

A Clinical Study of the Ocular Symptoms found in the so-called Mongolian Type of Idiocy. By Charles A. Oliver, M.D., Philadelphia. Reprint. 1891.

Die Behandlung der Tuberkulose mit Tuberkulocidin. Vorläufige Mitteilung von Professor Dr. E. Kiebs, in Zürich. Zweite Auflage. Hamburg und Leipzig: Leopold Voss. 1892.

The Pathology and Prevention of Influenza. By Julius Althous, M.D., M.R.C.P., Senior Physician to the Hospital for Epilepsy and Paralysis, London. New York: G. P. Putnam's Sons. 1892.

Tendon by Open and Subcutaneous Incision. Tubercular Synovitis and Osteitis of Shoulder. By H. Augustus Wilson, M.D., Philadelphia. Detroit, Mich.: George S. Davis. Reprint. 1892.

Miner's New Complete Obstetric Record, combining with the usual record, all desirable Medical Statistics, together with a Medical History of the Pregnancy. Joel A. Miner, Ann Arbor, Mich.

Fifth and Sixth Annual Reports of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. Transmitted December 1, 1889 and 1890. Harrisburgh. 1891 and 1892.

The Etiology, Pathology and Treatment of Diseases of the Hip-joint. By Robert W. Lovett, M.D., Out-patient Surgeon to the Boston City Hospital, etc. Fiske Prize Fund Dissertation No. xiii. Boston. 1891.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M.D., F.R.C.P., F.R.S. Second edition. Volume I, Diseases of the Nerves and Spinal Cord. Philadelphia: P. Blakiston, Son & Co. 1892.

Abdominal and Uterine Tolerance in Pregnant Women: as shown by the Low Rate of Mortality under Severe Lacerated and other Wounds, the Result of Direct Violence. By Robert H. Harris, A.M., M.D., Philadelphia.

A Manual of Autopsies designed for the Use of Hospitals for the Insane and other Public Institutions. By I. W. Blackburn, M.D., Pathologist to the Government Hospital for the Insane, Washington. Philadelphia: P. Blakiston, Son & Co. 1892.

Lectures on Pathology delivered at the London Hospital. By the late Henry Gwynn Sutton, M.B., F.R.C.P. Edited by Maurice Eden Paul, M.D., and revised by Samuel Wilks, M.D., LL.D., F.R.S. Philadelphia: P. Blakiston, Son & Co. 1892.

The Pocket Pharmacy with Therapeutic Index: A Résumé of the Clinical Applications of Remedies Adapted to the Pocket Case, for the Treatment of Emergencies and Acute Diseases. By John Aulde, M.D., New York: D. Appleton & Co. 1892.

The Mutter Lectures on Surgical Pathology. By Roswell Park, A.M., M.D., Professor of Surgery in the University of Buffalo, etc. Delivered before the College of Physicians in Philadelphia, 1890-91. St. Louis: J. H. Chambers & Co. 1892.

The Principles and Practice of Medicine, designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., F.R.C.P., Professor of Medicine in the Johns Hopkins University and Physician-in-Chief to the Johns Hopkins Hospital, Baltimore, etc. New York: D. Appleton & Co. 1892.

Original Articles.

ON THE VALUE OF ELECTRICITY IN MINOR GYNECOLOGY.¹

BY EDWARD REYNOLDS, M.D., BOSTON.

THE current literature of the day is constantly occupied with statements and counter-statements of the value and the worthlessness of electro-therapeutics in gynecology; but, in looking over the statements which are made upon one side and the other, I think it will be found that there is a marked difference between its advocates and opponents, in that all the former speak of its use in definite terms by differing methods of application, and with the use of different currents; while the majority of the latter condemn the use of electricity undefined, usually speaking of it as dangerous and painful. I cannot but believe that this difference of method indicates the reason for the difference of opinion; that is, that those whose experience has been unfavorable are, for the most part, men who have attempted the use of an agent as powerful for good and evil as perhaps any other in general use in medicine, without a sufficient preliminary study of the natural laws which govern its production, and of the natural history of the effects of the different currents upon the human tissues.

Since the different varieties of the electric current produce almost exactly opposite effects upon the tissues, one current stimulating, another soothing, a third encouraging, and yet another controlling hemorrhage, it is almost self-evident that their indiscriminate use must sooner or later be attended by considerable danger and severe pain.

Personally, I do not rank myself among the most enthusiastic advocates of the use of the current for each and every gynecological trouble, but I certainly wish to be regarded as one of those who believe it to be a most valuable agent in a large proportion of cases, holding it as I do to be, upon the whole, more frequently valuable than any one of our other conservative agents. I should feel that if I were obliged to give up some one of the methods which I habitually pursue in office practice, I should more readily abandon the use of the glycerine tampon, tincture of iodine, tamponade of the vagina, or massage of the uterus and its adnexa, than to lay aside my battery.

In this paper, it is my object to describe a simple armamentarium, with which it seems to me that most cases can be treated, in the absence of more elaborate preparations for the use of the current; to state briefly the amount and kind of electrical knowledge which I think essential to success in gynecological therapeutics, together with the technique of the applications; and, finally, to speak briefly of a few of the pathological conditions which are most uniformly benefited in this way, noticing in passing the indications and contraindications for the current in each case, and occasionally giving a brief outline of a specimen case.

The greater the knowledge of electrical physics which the physician possesses, the more sure is he to apply it to the needs of his patients with intelligence and skill, and to contribute to the progress of medical science; but for practical purposes comparatively little will suffice. He who thoroughly understands and can apply Ohm's law, that, the electro-motive force is equal to

the potential divided by the resistance, together with its numerous corollaries, knows all that is absolutely necessary for the comprehension of electro-therapeutics: but in making such a statement, I wish to emphasize the fact that he must possess this law and its corollaries with the utmost thoroughness, with the most complete understanding, and not by a mere mechanical effort of the memory. Such a knowledge can be acquired by any educated man with but a comparatively few hours' study of any of the more ordinary electrical text-books.

When once equipped with this knowledge, the physician must further acquire a clear understanding of the effects of the galvanic and faradic currents upon the human tissues, and must learn the modifications of their action which are produced by the use of one or the other pole as the active electrode, by the form of electrode employed, and by the degree of tension, or potential, of the current.

The situation and character of the organs with which we, as gynecologists, deal, enables us to use much more powerful galvanic currents than are within the reach of other electro-therapeutists. The insensitive condition of the mucous membranes, their separation from the skin of the abdominal wall by but a few inches of tissue, and the large expanse of surface which is there offered for the application of the dispersing electrode, are advantages enjoyed by no other body of specialists.

ARMAMENTARIUM.

If we except the use of electricity for the destruction of fibroid tumors and other new growths, we, however, seldom need to employ a galvanic current of more than from 80 to 120 milliamperes; and for ordinary office use, a battery with a maximum potential of 40 volts is usually sufficient. Any battery which is convenient, and furnishes a tolerably stable current, may be used for the purpose; but it may be remarked that the latter requisite implies necessarily the use of fairly large cells, since the resistances in gynecological work are so low that the portable chloride of silver and other small cells are exhausted with extreme rapidity. I have, myself, used for some years with satisfaction, a twenty-cell bichromate of potash battery, for the generation of the galvanic current.

In order to obtain the full benefit which it is possible to derive from the faradic current, it is necessary to possess a battery which is furnished with two induction coils, one composed of coarse, and the other of fine wire, and which is also possessed of several interruptors of varying rapidity, such as that devised by Dr. Engelmann, of St. Louis. Then, in addition to the batteries, it is necessary that the physician should supply himself with a reliable milliamperé-meter; it is highly desirable that he should possess a rheostat, or current controller; and finally, his outfit should include a set of flexible abdominal electrodes of various sizes, and a number of others for vaginal and intravaginal use.

For the negative, or dispersing pole, upon the abdominal wall, the wire gauze instruments now commonly sold have seemed to me as valuable as any, and more convenient than most. I have them covered upon one side with a thick layer of absorbent cotton and a single thickness of cotton cloth, upon the other with oiled silk. For the active pole, a vaginal electrode of a size which permits the metallic surface to be

¹ Read before the Fall River Medical Society.

thickly covered with clay or absorbent cotton, a set of olive-tipped intra-uterine bougies with insulated stems, an intra-uterine electrode insulated to within two inches of its tip, and shaped like the common applicator, to be wrapped with cotton, and one whose last two inches are of the shape and proportion of the ordinary uterine sound, are all that are strictly necessary; though the possession of a large metallic vaginal electrode, and one for bi-polar intra-uterine use, is occasionally an advantage. The entire outfit may probably be purchased for about one hundred dollars.

The technique of the application is simple. The patient should be placed in the ordinary dorsal position. It is unnecessary to remove or even loosen any of her clothing, unless an unusually powerful current is to be employed, since the smaller sizes of abdominal electrodes which are used with mild and medium currents can easily be slipped under the clothing from between the thighs.

The abdominal electrode, if not already prepared, should be covered with a clean piece of absorbent cotton of from one quarter to half an inch in thickness, when wet. This should be dipped in very hot water, and the superfluous fluid expressed until its moisture is just such that the water will not drip from it and wet the patient's clothing. It should be carefully arranged upon the electrode in such a way that the edges and angles are fully protected, placed upon the abdomen while still warm, and allowed to remain there during the few minutes that will be occupied by preparing and testing the battery; the object of this preliminary placing of the abdominal electrode being to permit the dried epidermis to become thoroughly moistened, thus greatly lessening its resistance. The battery and milliamperemeter should then be connected, and the connections tested by passing a weak current through the resistance of the rheostat, in order to see that everything is in working order. The vagina should be exposed by a speculum, and disinfected with the utmost care. If an intra-uterine electrode is to be used, it should be introduced with the utmost gentleness, any abrasion of the mucous membrane being certain to be followed by local cauterization; and should be allowed to remain in position, unconnected with the battery, until the sensations due to its passage have been forgotten.

The connection with the electrode should then be made while the battery is shut off from the circuit. The current should be turned on so gradually that the patient receives no shock, that being a phenomenon which is only experienced from an abrupt change in the electro-motive force. When the patient first begins to complain of uncomfortable sensations, the current should be checked, maintained at that height for from two to five minutes, and as gradually decreased; great care being taken that the connections are not broken until the battery has been wholly shut off from the circuit.

In administering the galvanic current, its strength may be increased by either one of two methods; the choice depending upon the variety of current which is desired. When the current of low tension is used, its increase is secured by the gradual addition of new cells to the circuit, by means of the cell collector. When the case requires a current of high tension, the whole resistance of the rheostat is at first included in the circuit. The force of the battery is then gradually turned on by the cell collector, until the desired effect

has been secured; or until its whole electro-motive force is in use. In the latter case, the current is again decreased by gradual diminution of the resistance of the rheostat.

ACTION OF THE DIFFERENT CURRENTS.

Before proceeding to the discussion of the various conditions in which electricity is of use in gynaecology, it is necessary to define briefly the effect of the different currents, and to speak of the contra-indications to their use.

The Galvanic Current.—The galvanic current of high tension is that which is produced by a large number of cells and then reduced to the amount desired by the interposition of a high resistance. The galvanic current of low tension, or of quantity, is that produced by a small number of cells acting through a low resistance. The first excels in power of cauterization, the second in electrolytic action. Cauterization is most marked when a metallic electrode is used, electrolysis when it is moist and non-metallic.

When the negative current of low tension is used with a non-metallic electrode, its action is almost wholly limited to intra-polar electrolysis; that is, the stimulation of retrograde metamorphosis and the partial reduction of the interposing tissues into the ordinary products of such metamorphosis. The lowly organized tissues, such as the pelvic exudates, are much more actively affected by this process than the more highly developed, normal tissues. The effect upon the mucous membrane which is in contact with the electrode, is in this application reduced to its minimum.

When the negative current of high tension is used with a metallic electrode, much less electrolysis of the intra-polar tissues is to be expected; but the tissues in contact with the electrode are likely to be somewhat extensively cauterized. The use of the negative pole as the active pole, in general, tends to the increase of hemorrhage, and is perhaps more likely to increase than decrease pelvic pain, at least for the few days which immediately succeed its use. It may often be advantageously combined with the sedative action of the faradic current of high tension.

The positive current of low tension with the non-metallic electrode is somewhat sedative in its effect and may be used for electrolysis; but it is mainly useful for the decrease of any haemorrhagic tendency, since it has no other advantage over the corresponding negative current and its use necessitates the application of the more painful negative pole to the sensitive abdominal wall.

The positive current of high tension with a metallic electrode is a highly effective chemical cauter which is attended by but little pain, and tends to decrease hemorrhage. Its advantages over other forms of cauterization are due to the fact that while when properly used its effect is limited to the mucous membrane, it tends from simple laws of electrical conduction to extend itself to the whole of the mucous surface, even including the recesses of the crypts, an advantage which can be claimed for no other caustic.

The positive current as a whole tends to decrease hemorrhage and relieve pain.

The Faradic Current.—The faradic current of high tension is that produced by an induction coil made up of many turns of fine wire, while the faradic current of low tension is produced by a coil which

contains but a few turns of coarse wire. The effects of both varieties of current are much modified by the number of interruptions per minute which is employed.

The faradic current of high tension with many interruptions to the minute, is perhaps more potent in alleviating pelvic pain than any other therapeutic agent which we possess. It has but little other effect. The faradic current of tension with few interruptions produces less marked relief of pain. It has a decided tendency to render the tissues anæmic, and is therefore often of value.

The faradic current of quantity, or low tension, is a sharp stimulant, and promotes contraction of both striped and unstriped muscular fibres, and thus relieves congestion and engorgement by hastening the current in the veins and lymphatics of the tissues through which it passes. Its effect is intensified by any reduction of the number of interruptions to the minute.

CONTRA-INDICATIONS TO ELECTRICITY.

Any acute inflammatory condition in the pelvis contra-indicates the use of electricity and must be most carefully excluded before the current is applied. The faradic current of tension has been recommended for use in acute pelvic inflammations. I have not myself as yet had sufficient courage to undertake its application, but have preferred to trust to slower, and, it seems to me, less dangerous methods; and indeed, am even accustomed to restrict myself to the less active of subacute cases.

The presence of pus in the pelvis, and of tubes whose uterine ends are occluded, is a contra-indication for any use of electricity, except electro-puncture, which I have never attempted and can say nothing about; believing as I do that where drainage is necessary, the use of the knife is the preferable procedure.

When much tenderness is present, the early applications should be restricted to the faradic current of tension. As this grows less, gentle galvanic currents may be resorted to, preferably in combination with it. The faradic current of low tension should never be used in the presence of inflamed tissues.

INDICATIONS.

It can be readily seen that the use of so many and such different agents as the various electric currents, either alone or in combination, opens up a field of such complexity that its complete discussion might well occupy a volume; and it seems to me that the only method by which discussion can be profitably elicited by a single brief paper, is the description of the methods employed in a few given affections, and a brief report of typical cases.

CONGESTION OF THE PELVIC ORGANS AND STENOSIS OF THE INTERNAL OS.

CASE I. Mrs. X., thirty years old, came to my office with the following history:

Her menstruation had always been irregular. She had been married six years, and had never been pregnant. Had always been liable to dysmenorrhœa, which had, however, increased greatly since marriage, and of late was becoming rapidly worse. Connection was frequent, but not improperly so. Physical examination demonstrated the presence of moderately well-marked anteflexion of the cervix, and intense congestion of all the pelvic organs. She had not seen her catamenia for nearly three months, and was complaining, as was usual at such times, of heat, discomfort,

and bearing-down sensations, referred to the pelvis. There was no pelvic tenderness. She was given the negative galvanic current of low tension, with a non-metallic intra-uterine electrode, for ten minutes, and was directed to use four quarts of the hottest water bearable, under a hydrostatic force of three feet, twice daily.

At the end of two weeks, she returned, and reported that within three days she had menstruated more freely than for some years, and with but little pain. The same application was made and she was directed to continue the use of hot water; to insert a glycerine tampon after each injection, and return before the next catamenial period. The congestion of the vagina and cervix was greatly decreased. Feeling much better, she neglected to report until after the next period; but as this was less free and much more painful, in spite of the persistent use of hot water and glycerine, she returned for another application of the current. Her next period was preceded by a fourth application of the same character, and was free and painless. She then left town for the summer. On her return in the autumn, she reported that she had continued well, and had now no complaint to make, except of her sterility, which appeared to me to be due to a stenosis of the internal os, caused by the sharp bend in the canal. The posterior cul-de-sac was deep, the external os was not directed forward to any unusual degree, and I believed that if the canal were freely patent, conception would follow, and the permanency of the cure would be assured.

In this belief, I applied the negative galvanic current of 20 to 25 millampères through an intra-uterine sound electrode (metallic) for five minutes; and this application was repeated four times; the first three at intervals of from five to seven days; the last after an interval of three weeks, due to her failure to report sooner.

This application was made October 31, 1891. She has not menstruated since, and from repeated vaginal examinations I have now every reason to believe that she is about three months' pregnant.

This case illustrates both the action of the faradic current of low tension in stimulating the functions of the uterus and the activity of the pelvic circulation, and also the electrolytic action of the negative galvanic current; it being plainly evident that each succeeding passage of the sound through the internal os was easier and less painful than that which had preceded it. The metallic electrode was used in accordance with my belief that the stenosis was partly due to a congestion and hypertrophy of the mucous membrane which would be best relieved by cauterization.

CHRONIC SUB-INVERSION OF THE UTERUS AND ITS LIGAMENTS.

CASE II. Mrs. B., thirty-seven years old, married sixteen years, the mother of six children, complains of a dragging sensation, great nervousness, unexplained crying spells, inability to leave the house alone. Physical examination resulted as follows: Moderate laceration of the pelvic floor, deep bi-lateral laceration of the cervix, its lips enlarged and everted; uterus large, soft, and low in the pelvis, freely movable; both ovaries large, heavy, and somewhat low; tubes normal. No pelvic tenderness. The faradic current of low tension was applied, at first through a vaginal, later through an intra-uterine non-metallic electrode, in sit-

tings of six to ten minutes, repeated every week. The uterus was supported by a suitable pessary. The patient was recommended an operation for the repair of the cervix and perineum, but told that better results would follow if she submitted to some weeks or months of preparatory treatment by electricity.

At the end of four months, the uterine body was of normal size, the cervix much smaller and less everted; the ovaries were as a rule in normal position, though subject to prolapse when the patient was fatigued; the vagina had decreased in size so greatly that the pessary which she then wore was of about two-thirds the width of that which was at first employed. She was able to go to New York with her husband, and spend the day in shopping, alone, without discomfort, an event of which she spoke to me as, "Something which I never expected to do again." During the summer months which succeeded, she came to town each month for the adjustment of the pessary; but owing to the fatigues of the journey, was not subjected to any electrical treatment. In the autumn, she considered herself well, and when told that nothing but the most constant care could insure her remaining in that condition, so long as the lacerations were not repaired, she decided that in view of her improved condition, she would prefer to remain under observation and defer the operation.

She has remained in good health for more than a year, and no longer requires a pessary, but is again considering the question of operation, which is now advised chiefly on account of the liability of a relapse from want of support.

This case is an illustration of what I consider one of the chief advantages of the faradic current; that of promoting the return of relaxed sub-involved organs to their normal size. It is of great value as a preparation for an operation, whenever the condition is due to a lack of support; and in assisting in enabling the patient to dispense with the pessary in cases of retroversion from laxity of the ligaments, where the supports are unimpaired.

PELVIC EFFUSIONS AND DISPLACEMENTS DUE TO CONTRACTED LIGAMENTS.

CASE III. Miss S., single, twenty-six, tailoress, complains of backache and pain in the right groin, running down into the thigh, of about two years' duration. Physical examination shows the uterus to be retroverted and adherent; the right broad ligament shortened, much thickened and very sensitive, especially on motion of the cervix toward the left side. Directed to use glycerine tampons.

At the end of three weeks, the pelvic tenderness was decidedly less; the uterus somewhat more movable. The negative galvanic current was applied, for five minutes, at each visit, through a non-metallic vaginal electrode, with a strength of 20 to 25 millampères, increased after a few sittings to between 40 and 45, and was followed at each visit by systematic tamponades of the vagina through a Sim's speculum. At the end of eight weeks the mobility of the uterus had greatly increased; it was in nearly normal position, and the patient was able to tolerate a retroversion pessary, which, with occasional intermissions on account of exacerbations of pelvic tenderness, she has now worn for two years.

This case is a type of those of its class which I have subjected to electrical treatment. If I am unable to

report the brilliant successes in the rapid dispersion of large pelvic exudates which some other observers have seen, it is because I have hesitated to apply the current to acute affections, in the belief that success could be as surely and more safely, although certainly more slowly, effected by other means; and also because in more chronic cases I have never as yet trusted to the current alone, but have thought it best to supplement its effects by the other and more familiar methods which are at our disposal.

CHRONIC PELVIC PERITONITIS, PARA- AND PERIMETRITIS, SALPINGITIS AND OVARIITIS.

CASE IV. Mrs. M., thirty-eight, mother of five children, two years ago complained of slight pain in the right side soon after the birth of the last child. Was recommended by her physician, without vaginal examination, to apply hot vaginal douches. She used one, and was attacked by severe burning pain in the right groin, for which morphia was administered for several days, and which in less severe form has never left her since. On examination, universal pelvic tenderness, most marked on right side and over uterine body. Faradic current of high tension, with moist vaginal electrode, about 1,500 interruptions to the minute for five minutes; used glycerine tampons. One week later, stated that though she still felt some pain, it had been distinctly less from the time of the electrical application. The same current was re-applied; patient not seen since; is reported to have continued well.

This case is an extreme example of the favorable effects of the faradic current of high tension in chronic pelvic tenderness, due to a slight inflammation of one or more of the pelvic organs. In my experience, its influence is usually favorable, but as marked an effect as this cannot always be expected.

ENDOMETRITIS.

CASE V. Mrs. F., forty-five, slight backache, especially when tired, moderate but increasing dysmenorrhea since one year after birth of last child; when during an unusually painful catamenial period, she passed a small oblong body, which, on rough inspection appeared to be an ovum of from a week to ten days' advance in gestation. On microscopical examination by an embryologist, it was declared to be a cast of the uterus from a case of pseudo-membranous dysmenorrhea. Application of the positive galvanic current, 65 millampères strength, from the metallic intra-uterine electrode, for about fifteen minutes; use of hot-water douches recommended; patient not seen again for six months, when she stated that since the application of the electricity, menstruation had been but slightly painful, though it was somewhat more scanty than before, and she had considered herself well. Had used the hot water faithfully during all that time, and was recommended to discontinue it. A large amount of froth had oozed from the external os at the time of the application, and it was felt that a thorough cauterization of the uterine cavity had been made. The patient's menstruation was always somewhat scanty, and it was probably an error of judgment to have used the positive, in place of the negative, current. She did not return for treatment until nearly a year later. At that time she considered herself well, but thought that her dysmenorrhea was somewhat worse. After six applications of the negative galvanic current, 50 to 60 millampères of five minutes each,

she menstruated much more freely and with less pain than usual, and said that she felt much more cheerful and in better condition than for some years. A metallic intra-uterine electrode was used, in the belief that the dysmenorrhœa was dependent on the existence of endometritis.

CONSTIPATION.

CASE VI. Mrs. F., sixty-three, pelvic organs senile, complains of pain in back. This was thought to be due to shortened sacro-uterine ligaments and constipation. Vagina packed, and given elixir rhamnus Purshiana Co., N. F., teaspoonful t. i. d. In the course of six weeks, some relief from pain. Packing somewhat inefficient from laxity of the vaginal outlet. Cathartic increased to two teaspoonfuls t. i. d., without satisfactory effect. Given faradic current of low tension, with small sacral and abdominal electrodes, twice weekly. After five applications, was able to obtain a daily motion with one teaspoonful of the cathartic three times daily. Bowels have since continued in fair condition under the continued use of the same prescription.

If it be urged, in discussion of these cases, that they have been selected as favorable instances of the value of the current, I must at once plead guilty to the indictment. All cases do not make as favorable a showing as this. These were successful cases, and selected as an argument in support of the use of electricity, and of the view which I myself personally support warmly, that in properly selected cases it is a therapeutic agent of great efficiency. If in cases which are less fit for its employment it acts less well, and in improper cases does harm, that is no more than must be admitted for every potent therapeutic agent. The use of electricity is an art which must be carefully studied, which requires in its application much care and judgment, and, above all things, an accurate diagnosis of the presence or absence of its contra-indications. I must freely confess that when I first began to use the current, in many of my cases the result was not satisfactory, and I was obliged to discontinue electricity and resort to other means. In one of my early cases, positive harm resulted from an injudicious application of the faradic current of low tension, in the presence of a subacute inflammation; but with increasing experience, the proportion of marked successes has become considerable; the proportion of cases in which I have secured the alleviation of symptoms has become large, while the percentage of unbefited cases steadily decreases: and I find that as time goes on the proportion of cases in which I use it is steadily though slowly increasing. I cannot help believing that in the hands of well-trained practitioners of intelligence, it is likely to be more and more highly rated year by year.

ETHER DRINKING.—Russia has become infected with the vice of ether drinking, and the pernicious habit has spread so rapidly that the Government has judged it necessary to prohibit the free sale of ether and of certain of its compounds, and to schedule it among the poisons the sale of which, even by pharmaceutical chemists, is surrounded with severe restrictions, as was lately done in Ireland at the suggestion of Mr. Ernest Hart. The measure has been very effectual in Ireland, and we hope it may be so in Russia.

CASES OF DYSPEPSIA WITH TREATMENT BASED UPON AN EXAMINATION OF THE GASTRIC JUICE.¹

BY GERTRUDE W. VAN PELT, M.D., BOSTON.

THE hope of a scientific basis for treatment in gastric disorders, and the fascinating possibilities suggested by the chemical analysis of the juices, aroused in the early days of this study, a natural enthusiasm; but, as the looked-for results often failed to follow the administration of the chemicals so clearly indicated, there has perhaps been a decrease in the general interest. Possibly too much was expected of it, for the truth of the text-books' teachings — that the stomach is outside the body — must not be forgotten. In treating it we are but at the threshold of the domain which is to be put in order, and the folly of considering any one symptom here, rather than in its relation to other symptoms and to their underlying causes, is true of dyspepsia, as of any disease. Still, a knowledge of the condition of the stomach is a certainty amid uncertainties. Even though that condition be dependent upon distant or obscure causes, such knowledge affords an aid too valuable to be discarded, and often plays an important rôle in helping to solve the varied and intricate problems which each separate case presents. In support of this belief I would like to present to you the histories of a few cases.

Before passing on to them, however, I will take occasion to show an arrangement for extracting the gastric juice, which I have found to facilitate very much the operation. To the tubes inserted in this glass can be attached by rubber tubings, the stomach-tube and an aspirator, and the glass can be held in place and concealed from the patient by placing it in a partly closed table drawer. Then after the introduction of the tube, if its eye happens to be in the liquid, and the air in the glass has previously been rarefied; the moment the stopcock is turned, a little liquid is forced into the glass. If the liquid does not run, it is due either to the stomach's being empty; to the eye of the tube being occluded, or what is more common, to the tube being pushed in too far or not far enough, so that the eye does not dip in the liquid. Always, before readjusting the tube, or withdrawing it, the air must, of course, be allowed to re-enter, so as to avoid any possible irritation from suction on the mucous membrane.

CASE I. Patient had been nervously tired for four or five years and at times had suffered from dyspepsia. For four months before treatment she had suffered constantly from it. Her symptoms were, heaviness in the epigastrium, occasional acidity and burning, failure of appetite, constipation, much loss of strength, nervous depression, sleeplessness and sudden attacks of dizziness, coincident with a distress in the region of the heart. During these four months, there were a few days when the symptoms were much aggravated, as she could take only milk gruels in small quantities,

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and was unable to leave her bed. The first examination of the gastric contents was made five hours after a test-meal of soup, roast beef, potatoes and bread. The juice contained .17% of lactic acid. HCl was absent. There was much mucus, and much of the meat was undigested. Forty drops of a four per cent. solution of HCl were prescribed, to be taken in a glass of water during the first hour after meals, and the stomach was washed daily. This treatment was continued for three weeks, without any marked change in the symptoms, except that the patient was relieved for a while after each washing, and passed better nights. About this time she complained of a burning sensation, which was relieved by the washing, and which was, she thought, like the burning she had often felt before. Another specimen was taken, and what was surprising, it bore all the characteristics of a specimen taken from a patient suffering from hyperacidity; that is to say, there was an abundance of clear liquid, and a sediment of farinaceous food, which fell at once to the bottom. On examination there was found .45% of HCl, no organic acids, no mucus. The burning sensation before washing was, of course, due to the excess of HCl, as it had previously, no doubt, been due to the presence of organic acids. From symptoms alone, it would have been difficult, if not impossible to have recognized the change. The administration of HCl was stopped, and there was considerable difficulty in quieting the irritation of the gastric glands. The daily washing was continued and alkalized given, but the condition did not improve decidedly until coffee was given up, and only the blandest food eaten. Since this experience, I have begun treatment, in most cases, with smaller doses of HCl, and watched its effect more carefully.

At the end of six weeks, or nine weeks from beginning treatment, the secretion was normal; the appetite was much improved; the patient slept better; the sudden attacks of dizziness had entirely disappeared, and there was no distress in the stomach. The constipation was a more obstinate symptom, and did not disappear until several months later, after there was a gain in general strength. As soon as possible after the digestion became normal, the amount of nourishment was increased gradually, as the patient could bear it. During the year following, she gained fifteen pounds in weight, and very much in general strength. At times, after some unusual exertion, she suffered from dyspepsia, but rest, and a few washings always restored her.

CASE II. Miss K., thirty-one years of age. Had dyspepsia of ten years' standing, for which she had at various times been treated. She was subject to attacks of vomiting, so that, at times, for days together she could retain but little food. After an attack of pneumonia two years previous, her health was worse, and later the dyspepsia grew more serious, as she was often kept awake by it the greater part of the night. She suffered at time of beginning treatment from occasional vomiting of froth, with or without food, but the most distressing symptom was a constant sensation of gas rolling about in the stomach, which sometimes caused palpitation with a feeling of great weakness. There were attacks of gastric pain, which were relieved by mustard plasters; acid eructations; constipation and anorexia. She did not notice that certain kinds of food disagreed. Tongue was flabby and pale, and she was very anaemic.

Physical examination. Stomach extended on left

side to a point half way between umbilicus and pubes, and was not found at all to right of umbilicus; tenderness on pressure over this region; heart sounds normal; apex beat on a line with nipple; pulse 90, and irregular, full and compressible. Urinalysis, normal. Analysis of the gastric juice three hours after a test-meal; total acidity .37%; HCl absent.

As the patient dreaded having her stomach washed, the following treatment was ordered: eight drops of the fluid extract of *Pinus Canadensis*, in a glass of hot water, to be taken half an hour before meals; three drops of the dilute HCl in half a pint of water, to be taken during the first hour after meals. Her bowels were regulated; and she was treated with the constant current, 30 milliamperes, twice a week, one electrode being over the stomach, the other opposite it on the back. At the end of two weeks she was feeling somewhat better, and a second analysis of the gastric juice was made, medicine having been omitted for that day. It was as follows: total acidity .4%, HCl .02%. Artificial digestion complete in 3 hrs. 39 m. With HCl added to the juice to make it .2%, it was complete in 2 hrs. 27 m., and with HCl to .2% and pepsin added, complete in 3 hrs. As the progress did not seem to be sufficiently rapid, the patient was persuaded to have her stomach washed daily; and the HCl, and galvanic current were continued also; in two weeks iron was added to the treatment.

The symptoms of dyspepsia rapidly disappeared, and four weeks later she said her stomach had not felt so well for years. Examination of the juice at that time showed the following condition: Total acidity .3%, all of which was due to HCl; artificial digestion complete in 1½ hrs. The constant current and HCl were stopped; and an analysis three weeks later showed the total acidity to be .1%; all of it due to HCl. She had at this time no symptoms of dyspepsia, if she confined herself to a simple diet, and her appetite was good. She remained free of dyspepsia for four months, until she caught a heavy cold. She is of a delicate constitution, has a marked strumous diathesis, and is subject to severe colds. These always reproduce the same gastric condition, which is, however, relieved by the same measures.

I will say, in regard to the galvanic current, that my employment of it was based upon some experiments made in Germany, which showed that it had the power to increase the secretion of gastric juice. I have since applied it for the same indication, directly to the walls of the stomach, by means of a deglutible electrode, devised by Dr. Max Einhorn, and described in the *Medical Record* of May 9, 1891. I used, on grounds purely theoretical at that time, the positive pole. Later I had this electrode, which I will pass around, made for me by Codman & Shurtleff. It is patterned after Dr. Einhorn's, but differs in being much smaller, in having a stronger and stiffer wire, so that the electrode can be pushed down, which makes it easier of introduction and less disagreeable to the patient; and in being much more securely fastened, so that there is no danger of leaving the electrode within the stomach. The copper-tip unscrews, so that if the wire should show signs of weakening at any point, it can easily be replaced by a new one.

To test the immediate effect of electricity upon the secretions, I have begun a few experiments, which were conducted as follows: The stomach was thoroughly washed, and the water, when clean, analyzed

for HCl. If none was present, 200 cm. of tepid water was given, and allowed to remain in the stomach ten minutes, then withdrawn and analyzed quantitatively. The same procedure, with the deglutible electrode in the stomach ten minutes, using the positive pole and a current of 25 ma. The same was repeated at another time, applying a current of 25 ma. externally. These experiments were so few that I will not report them in detail, but mention simply that the positive pole increased the secretion of HCl, as did also, to a less extent, the external application. In the case which I will report next, however, there was no secretion of HCl after the use of the current, but as she greatly improved under these applications, I inferred that they in some way improved the nervous tone of the stomach, and this is, I am inclined to think, the most important result of this therapeutic measure. Dr. Einhorn has published a most interesting article on this subject in the *Medical Record* of January 30, 1892.

CASE III. March, 1891. Mrs. T., fifty-nine years of age. Had never been very strong, but did not consider herself an invalid until about two years previous. During that time she had been a great sufferer, and had been confined to bed about half the time, with much pain and loss of strength. When she presented herself for treatment, she had almost abandoned hope of relief, and said she found life unendurable. Her chief symptoms were pain, loss of strength and attacks of vomiting. For months she had not been free from a burning pain in the middle of the back, which rendered her very nervous and prevented sleep. She had acid and gaseous eructations, no nausea as a rule, and rarely headache, but great loss of strength and enormous development of adipose tissue. Appetite was good, but as all food caused distress, she ate but little. Constipation and hemorrhoids. Examination showed no enlargement of the liver, but bowels and stomach much distended with gas. Heart sounds normal. Analysis of gastric juice four hours after a test-meal: Total acidity .27%; HCl absent. Liquid abundant and greenish. Gmelin's bile test, negative. Residue contained an enormous quantity of mucus, some starchy food and large particles of meat. Stomach was washed thoroughly after removing the specimen, and for the remainder of that day and the night following, there was great relief from the pain in the back, so that she slept six hours, a thing she had not done for a long time. As indicated by the analysis, HCl was prescribed. In two days her symptoms were aggravated and other specimen was taken. A quart of liquid was easily removed, bearing all the appearance of hypersecretion of HCl. Analysis showed it to contain .25% of acid, all of which was HCl. After this, a daily lavage of the stomach with a weak solution of *Pinus Canadensis* (which she soon learned to do herself) and the faradic current twice a week, constituted the treatment.

Frequent analyses of the gastric contents were made, with no uniformity in the results. The secretion of HCl was once as high as .3%, and often was completely lacking. Artificial digestion was attempted once when .25% of free HCl was present, but it was incomplete in eight and one-half hours, both with and without the addition of pepsin. The only constant condition seemed to be that there was always very much in the stomach, and food was often removed which had been eaten twenty-four hours or more before. The stomach was clearly dilated, though on account of the quantity of fat in the abdominal walls,

physical examination was difficult. After six weeks' time the patient was much improved. She slept well and was relieved entirely of the pain in her back soon after beginning lavage of the stomach. But she was still weak, and seemed as incapable as ever of digesting more than a small amount of the food she ate. It seemed doubtful whether she would ever be materially better, and she was told that relief from pain was all she must expect, and that possibly she might always need to wash her stomach. She possessed great courage and perseverance and said that seemed to her as nothing in consideration of the relief which it afforded.

The apparent irregularity in the secretions, suggested some nervous disturbance, and in the hope of influencing that, she was treated twice a week for two weeks with the constant current (10 ms.) over the pneumogastric nerve. A specimen removed after this contained what had been found once previously, a normal amount of free HCl, and no organic acids, but there was no added improvement after this treatment. The application of the galvanic current directly to the mucous membrane of the stomach was then tried by means of the deglutible electrode. The negative electrode four by six inches in size was applied over the liver or stomach anteriorly. This seemed to act very beneficially. She digested better; was able to eat more; and said she never felt the burning in the stomach, which had been so frequent up to that time. These applications were made twice a week, for six weeks, with a medium strength of 20 ma. During this whole time and four months after, the secretion of HCl was normal, varying from .15% to .2%, and no organic acids were present three hours after eating. On seeing her again two months later, it was found that, although the other conditions continued improved, mucus was still present in quantities, and the muscular tone of the stomach remained defective. For these conditions the stomach was washed three times a week with a solution of silver nitrate, twelve grains to a pint of water; which was immediately preceded and followed by a washing with clear water; and twice a week the faradic current (with the coarse wire of Gaiffe's battery) was used within the stomach. In four weeks' time there was no perceptible mucus and but little food at the washings. Her general health at this time was wonderfully improved. She was obliged to attend closely to hygiene, but was free from pain, could do her own light housework, and was able to walk four miles at times without fatigue.

A satisfactory explanation of this case has not suggested itself to me, and I hope that some one here may be able to throw more light on it than I can. I do not understand why there should have been in the beginning such a difference in the secretions from day to day. The secretion of mucus was unusual in amount, out of proportion to the other symptoms in a case of gastric catarrh, and I have thought that, possibly, owing to this, the muscular atony and consequent dilatation, the food swallowed did not practically come in contact with the walls of the stomach, and that therefore the gastric glands were not stimulated to secretion; while at other times, owing perhaps to a difference in the character of the food, or to some different mechanical condition, the gastric glands were stimulated.

CASE IV. Miss E., aged eighteen years, was a delicate girl, of scrofulous history and somewhat anemic. She complained of distress after eating, which was not great but constant, and her stomach felt raw after

taking a cold. Appetite was poor, bowels regular. As I disliked to propose stomach washing in this case, and as the symptoms seemed to indicate a slight gastric catarrh, HCl was given from time to time during a period of three months. But as there was no constant or decided improvement, a specimen of gastric juice was removed five hours after a test-meal. The total acidity was .33%, free HCl .16%. The solid residue which was small, contained considerable mucus and amyaceous material. Albumen digested in one and one-half hours in the oven.

Owing to a bad cough, which interfered with the use of the stomach-tube, she was ordered to drink half a pint of a weak solution of *Pinus Canadensis*, as hot as possible, one-half an hour before each meal; but four weeks later, there being little improvement, the stomach was washed daily with a weak solution of *Pinus Canadensis*, for six weeks, when she left the city. At first there was much food in the stomach at the washings, but this gradually decreased, so that towards the end, the stomach was generally empty. A specimen taken shortly before her departure contained .18% of HCl, and no organic acids nor mucus. She had distress in the stomach occasionally, but it was much decreased. Six months later she wrote that her stomach was not troubling her.

CASE V is a case of Dr. Morton's, for whom I made one analysis, and who has kindly permitted me to repeat it.

Mrs. R., sixty-eight years of age, was strong when young, but for fifteen or twenty years had suffered from dyspepsia. It began by distress after eating and a weak feeling in the stomach. At one time she had had catarrh of the bowels badly, which had disappeared. She used also to have pyrosis. At time of beginning treatment, suffered only from loss of appetite and weakness. Bowels, though regular, were sometimes much distended with gas. Never pain, but there was often a full feeling after eating a small amount. Weight 98 pounds, once weighed 130 pounds. Pulse 92. Stomach, somewhat dilated. Gastric juice three hours after a test-meal contained .29% of free HCl, and no organic acids. Peptones abundant. Artificial digestion complete in fifty-five minutes. Solid residue contained mucus and bloody mucus. This seems to me to be an instructive case, and illustrates well the difficulty of making a diagnosis from symptoms alone. A treatment by HCl would have been suggested in this case, almost, if not quite as much as in the last one, and yet there was a hypersecretion, whereas in the other, there was a normal amount only after several weeks' use of the drug. Had treatment been instituted to increase this secretion, it is quite possible that gastric ulcer might have resulted. For although the etiology of gastric ulcer is not yet determined, recent study has shown that in the majority of cases, this condition of hypersecretion and irritability exists. As the patient lived at a distance, and only came to the city once for a few days, she could not be closely watched, but under a general treatment tending to quiet the irritation and improve the nutrition. Dr. Morton tells me she has improved.

CASE VI. Mrs. T., forty-eight years of age. She had had for three weeks a constant burning pain in the stomach. Was nervous and frightened about herself. For some time she had had a domestic trouble, which had been a source of great anxiety. Stomach not dilated. Specimen of gastric juice three and one-half

hours after a test-meal: Total acid .1%, all of which was lactic acid. HCl was given and the stomach washed almost every day. After each washing she was relieved from the burning pain for the rest of that day, but the result was not permanent, and the treatment was not persisted in. Later, after a removal of the cause of mental anxiety, the dyspepsia disappeared.

CASE VII. Miss S., aged thirty, was extremely anxious, apprehensive and nervously depressed. She had suffered much from dyspepsia for over two years, and had been steadily growing weaker. Appetite poor. Troubled much with eructations and rolling of gas in the stomach, but suffered no pain, except much headache. She slept poorly, was very thin, having lost a great deal of flesh. She unfortunately was obliged to work hard, and was never free from worry. She had been treated in various ways for a long time without any great improvement. Heart sounds normal. Stomach extended three fingers below umbilicus and was entirely on the left side. Specimen of gastric juice four and one-half hours after a test-meal: Quantity of fluid very abundant, total acidity .46%, HCl absent, peptones present, mucus abundant. The diet was first carefully regulated, HCl was ordered, and the stomach washed daily with a solution of *Pinus Canadensis*. In two weeks there was a normal secretion of HCl and .25% of organic acids. Once a week the stomach was washed with nitrate of silver (gr. xv to a pint of water). In four weeks there was no mucus observed, and these washings were discontinued. The secretion of HCl failed once again and the drug was renewed; also the positive pole of the galvanic current, with a strength of 25 ma. was applied directly to the stomach. After four treatments extending over four weeks, the secretion was normal, and she was feeling better. But as digestion was still very slow, faradism was used four times within the stomach, with the coarse wire of Gaiffe's battery. At the same time, washings with salicylate of soda, and salol internally, were used successively to control the abnormal fermentation.

She has had twelve treatments in all, which have been very irregular, owing to her living at a distance, and she is still under treatment. The secretion of HCl has been normal for a long time, but fermentation from organic acids has not been controlled. The lower border of the stomach is at the umbilicus, and there is so little food at the washings, that it is only washed occasionally. Her appetite is excellent, and she sleeps well. She has no headaches, but is troubled with rolling of gas more or less. Her strength has greatly increased. She is cheerful and able to do much work without fatigue.

The next case is especially interesting to me because I questioned at first whether I had not a disturbance of purely nervous origin to deal with, which could not be cured by treatment directed alone to the stomach. Results, however, seemed to indicate that it was a case in which removal of a peripheral irritation was able to avert a threatened nervous disturbance in a person who had such tendencies.

CASE VIII. Miss P., forty-eight years of age. Father died of apoplexy, and one sister has for years suffered from a severe form of migraine. Patient herself has never been very strong, though generally well and is able to work at the millinery business regularly. She comes for treatment on account of severe attacks

of pain in the stomach, which occur every five to seven days usually, but are occasionally delayed as long as two weeks, never longer. They are preceded by a nervous, restless and apprehensive feeling, which lasts from several hours to a day. She has occasionally, pain in the back of the head, and along the left side, in the arm and leg, and she thinks she is more apt to have that at the time of a gastric attack. In the intervals of these pains in the stomach, she is troubled very much with a distress which is relieved by eructations of gas. She has had this trouble for about ten years, but lately it is worse. She is well nourished, weight, 190 pounds. Bowels regular, but movements never well formed. Sleeps well, except just before one of her attacks. Urine, normal. The stomach tube was passed twice after a test-meal, but the aperture became clogged with large pieces of meat, and the operation was not persisted in. A drop of the juice which remained at the bottom of the tube, did not affect Congo paper, showing that HCl was probably absent and certainly insufficient. She was ordered to take five drops of dilute HCl in a glass of water during the first hour after meals; eight drops of the fluid extract of *Pinus Canadensis* in a glass of hot water one-half hour before meals, and she was recommended to chew her food carefully.

Two weeks later she said her stomach felt stronger. She had had no attacks of pain and had less gas. Analysis of gastric juice: Total acidity .2%, HCl .07%. A very small amount of liquid came through the tube, probably on account of the abundant quantity of mucus. One week later was feeling well; had had no attacks of pain. Total acidity of gastric juice .2%, all of which was free HCl. The stomach was washed with water after the specimen was taken. A week later the patient came for the fourth time, having been under treatment five weeks. She had been overworking a few days and had been very tired. She was annoyed somewhat by gas in the stomach, but otherwise had no trouble. The stomach was washed with nitrate of silver (gr. xv to the pint), preceded and followed by a washing with clear water. She was ordered to continue taking three drops of dilute HCl after meals and drinking hot water before, for two weeks and to see me if she had any further trouble. Four months have passed, and I have not yet seen her.

In three cases, which I will not report in detail, this method of examination has been most useful in excluding a gastric disease, when the symptoms seemed to point to it. One of these cases had been twice in a hospital to be treated for gastritis. All the discomfort and distress was felt in the stomach, but the main trouble was in the liver and to treatment directed to that organ she responded at once. I have treated a few other cases in this way, but as they were somewhat similar to the preceding, I will not take your time to report them.

School Trustee. — "Your class in physiology does not appear to be up to the standard, Miss Birch."

Teacher. — "I've done the best I could with the chart that I found here, Mr. Small."

School Trustee. — "Um—er—what did the charts consist of?"

Teacher. — "Six views of a whiskey stomach."

— *Puck.*

PROVISION FOR PATIENTS WITH CHRONIC DISEASES IN THE CITY OF BOSTON.¹

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The object of this paper is not to present anything materially new; it is merely to call attention to a long-recognized defect in our institutions for the care of the sick, and to elicit discussion.

Although the provision for the treatment of contagious diseases and disorders that come under the care of the specialist is not all that can be desired, yet it is a fact that our present hospitals can provide reasonable accommodations for patients with acute diseases. Now, if it be incumbent upon us to provide for the proper treatment of such cases, why is it not equally incumbent to provide for patients with chronic disease? It is point of fact the provision is most inadequate. The Massachusetts General and the City Hospitals are crowded with patients with acute diseases; the latter institution refuses incurable cases, and questions closely the reasons for a stay in the hospital beyond two months, although it gives temporary relief and shelter to many chronic cases. The Carney Hospital receives a few such cases; the Home for Incurables has sixty beds, and other smaller homes and institutions provide for perhaps as many more.

There is a large class of patients, of whom we see many in out-patient clinics and free dispensaries, who are victims of chronic incurable disease, phthisis, cancer, Bright's disease, paralysis, chronic surgical disorders, etc. How many such cases there are it is not easy to say, but that there are many requiring hospital care is a fact familiar to all of us and we can seldom find a permanent shelter for them. Of course, many patients with chronic diseases prefer to remain at home with their families and friends, free from the routine of an institution; but many others have no homes or need hospital treatment.

In one class of chronic diseases—those of the mind—the hospital treatment becomes imperative; but the provision which the city makes for its insane is not adequate; out of 1,118 insane belonging in Boston who were in public institutions on January 1, 1891, only 399 were in the city asylums. The rest were boarded at the city's expense at the State asylums. In consequence of the repeated urgings of Dr. Fisher, however, further provision is now making for the city's insane within the city limits.

Setting aside the limited provision which can be made for patients with chronic diseases at the Carney Hospital and small private charitable institutions, the only places to which patients with chronic diseases can be sent is to the city almshouses at Long and Rainsford Islands. At Rainsford Island is the institution for female paupers, with 300 or more inmates.² Here there is a very old hospital with 50 beds, to accommodate acute cases among the inmates, and all the maternity cases. On Long Island is the institution for male paupers with about 300 inmates.³ The sick are cared for in the dormitories, and among them are 75 women, chronic cases, who have never been removed to Rainsford Island for lack of accommodation. January 1, 1891, there were 227 patients re-

¹ Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, February 17, 1892.

² Maximum number of females in 1880, 463. Average number of females at both islands, 457.

³ Maximum number of males in 1880, 436. Average number of males at both islands, 308.

maining in the hospital; 763 had been admitted during the year, 135 had died, 5,732 had been treated at sick call.⁴ A new hospital is now building to accommodate 100 patients; the present accommodations are confessedly inadequate and over-crowded.

During the summer these institutions have been made the subject of considerable adverse criticism in the public press. Whether this criticism were just or not, I am unable to say. The results obtained there seem to be admirable, despite the disadvantages under which the physicians work. There are reasons, apart from any question of good or bad administration, which render it undesirable to send patients with chronic disease to them.

The first of these objections is sentimental, and therefore of much greater importance. An industrious man or woman, who becomes incapable of further self-support by reason of disease, can, without loss of self-respect, go to a lunatic hospital or to a city hospital for free treatment, but such a person will go to the almshouse only as a last resort, and the act of going to such an institution is the last drop in the cup of their degradation. The good old Yankee prejudice against the poorhouse still holds, and when it is crushed, you have crushed not only the self-respect of the patient but that of the family; and from that to absolute pauperism is but a short step. Anything that tends to pauperize a family must be deprecated, and, although theoretically the difference between a hospital and the hospital ward of a poorhouse may be only that "twixt tweedledum and tweedledee," nevertheless it is just such trifling differences which make the great distinctions of life.

The second objection is the remoteness. It takes from half to three-quarters of an hour from the wharf to reach the islands, and the boat makes but two trips a day. The public institutions of New York are also on islands, but they can be reached in a few minutes from the wharf, and a tug makes frequent trips. This remoteness and inaccessibility render the visits of friends infrequent and difficult; in cases of sudden changes in the patient's condition it becomes impossible for the family to be summoned promptly, and the seclusion taken from the publicity which is desirable as a guard against abuses. Furthermore, since it is difficult to keep up the personal associations which make for the patient's mental hygiene, this inaccessibility renders it impossible to employ in such a hospital a visiting-staff as in the other hospitals. That an efficient visiting-staff and training-school would be an improvement on the present state of things is self-evident, and such a statement casts no reflection upon the present management.

In spite of the boards of the overseers of the poor in the different towns, it has been clearly shown that the condition of the insane in our town almshouses varies from tolerable to intolerable. Nowhere can it compare to the condition of the insane in the asylums, and in most places it is a disgrace. The condition of patients with other diseases in our almshouses is doubtless better, because the general practitioner, or the town physician, can deal better with such cases than he can with insanity, but I doubt if even in these cases, the treatment, as a rule, can be favorably compared with that of a large hospital. Of course in such a statement I mean to except the conditions of patients in a large chronic hospital like Tewksbury.

⁴ Report of the Commissioners of Public Institutions. 1890.

What should be done? A hospital should be established within the city limits, near the line of some railway or horse-car route, so as to be at all times accessible. It, of course, need not be as central as the hospitals which have to treat acute diseases and accident cases. It should be a hospital — not a poorhouse — with a sufficient visiting-staff, and with wards or beds for special diseases, under the care of specialists — syphilis, paralysis, cancer, tuberculosis, epilepsy, all should be provided for. Such a hospital may consist of various moderate-sized pavilions, and room should be provided for growth, for eventually it would have to provide for 500 or 1,000 patients. Such a hospital might be in the same grounds and under the same general supervision as a hospital for the chronic insane, which would reduce some of the expense. This union of the two hospitals is seen at Blockley in Philadelphia, and at the Charité in Berlin.

The objection, of course, is the cost. The original building cost would be about \$300 a patient, as in the new building at Austin Farm. The cost of maintenance would also be much higher than at the poorhouse, perhaps higher than at the Lunatic Asylum, but lower than at the City Hospital. It is therefore more probable that a people's forum or a free university or some other demagogical scheme will get an appropriation first.

THE CAUSE OF SEA-SICKNESS.¹

BY CHARLES NORTON BARNEY.

PLUTARCH, who thought that sea-sickness was caused by the smell of the salt water, was probably the first theorist on the subject, and since his day there have been advanced numerous theories not very much more satisfactory than his in their practical results.

But before showing what theories are most generally accepted, I wish to make a distinction between genuine sea-sickness — that which is mechanically induced — and the subjective form which is purely emotional cause. There are some sensitive women who are nauseated at the first tremor of the boat; some even at the thoughts called up by the sight of the ship; and others who get sick on packing in preparation for the voyage. All these are representatives of the second form, and in such persons there is a predisposition to sea-sickness which shows itself on land as well as on the water in a condition of general sensitiveness or neurasthenia.

Some have said that all sea-sickness is of this subjective form. But one may wake from a sound sleep in the very worst paroxysms. Then again, if a dog be deprived of consciousness, and tied to a platform which is made to go through the movements of ship in rough weather, all the symptoms of sea-sickness occur, and in such a case emotional causes, such as fear, owing to the conditions of the experiment can have no part in the etiology.

Perhaps the most plausible theory to explain how motion *per se* can cause sea-sickness, is the one which places the origin of the trouble in the inner ear. Among the chief physiological facts established during the past forty years is the knowledge that our bodies are endowed with a special sense whose function is "to

¹ Read at one of the Physiological Conferences of the Harvard Medical School.

determine the position of the head in space," and to regulate the mechanism by which equilibrium is maintained. The principal seat of this faculty is in the semicircular canals of the inner ear. It had been long doubted whether these had any connection with the sense of hearing, until some time ago Ferrier and others noticed that injuries to the canals did not impair hearing, but caused interesting effects in the loss of equilibrium. For instance, in pigeons, when the vertical canal was cut, the bird turned a series of back somersaults in a most extraordinary manner; and when the horizontal canal was cut, the pigeon whirled around in a horizontal plane. Much doubt has been thrown on the results of these experiments as to the direction of the motion, but the chief fact remains that injury or irritation to the canals produces loss of equilibrium, and, what is especially interesting, such irritation is nearly always followed by vomiting.

Sea-sickness seems to be essentially a disturbance of this faculty of equilibrium. It seems that to be most favorable to the coming on of the disturbance the motion should be either backward, downward, or oscillating, and we shall see why this is so a little later when we notice that the ampulla are all at the upper front parts of the canals. A combination of these conditions is the most effective, especially if the motion is at the same time irregular. Hence many persons who feel no discomfort from the regular swing of a yacht, become sick in a row-boat or a steamer.

But we are anticipating; we have not yet seen how motion can cause irritation of the semicircular canals. The endolymph follows the motion of the head in those canals whose plane corresponds most nearly to the direction of that motion, and when the motion is suddenly reversed by the oscillation of the ship, or changed in direction by a new wave striking her on another point, the endolymph continues in its original direction until stopped by friction. This causes undue pressure in one or more of the ampulla, by which wrong impressions are conveyed to the sensorium, and incoordination, giddiness, etc., result. The otoliths in the endolymph are washed up against the nerve filaments at the front of the canals and produce an excessive irritation, which is expressed in vertigo and vomiting.

But the semicircular canals alone, even in sea-sickness from motion are not always the only cause of the trouble. There is another class of cases to which Dr. Irwin applies the term, "Labyrintho-musculo-visceral vomiting"; by which he means "vomiting due to mechanical disturbance of the viscera, permitted by incoordinate muscular action, the result of faulty labyrinthine impressions. The violent and complicated movements of a ship in a heavy sea have a tendency to displace the abdominal viscera. In one accustomed to the life, involuntary muscular action protects the organs from contusion." In others, the course of events is as follows: The endolymph, as already stated, follows the motion of the head, and, after that motion has stopped, continues for a second or so to move on in the original direction. During this second, "erroneous impressions are conveyed to the sensorium, which in turn sends a mistaken message to the abdominal muscles, a wrong set are brought into action," and complete abdominal chaos is the result. The intestines bulge forward at the end of each descent of the ship, so stretching and irritating their attachment that the abdominal vessels are gorged with blood and vom-

iting sets in. This class of vomiting is very violent. It is relieved in the same way as the other class (that is, by remedies directly affecting the nervous system, as anodynes and sedatives), but with the addition of a tight bandage round the abdomen.

There is probably a minor kind of sea-sickness caused by the mere churning about of the food in the stomach, irritating the nerves there as they would be irritated by an emetic. This is often the sort experienced in small boats, and is at once relieved by vomiting.

That sea-sickness can exist independent of visual impressions is shown by the fact that one may be attacked while sleeping, and, besides, it is well known that the blind are not exempt. There can be no doubt, however, that stimulation of the sense of sight has an important influence in some cases, as has also stimulation of the other senses. Bad tastes and odors will often cause symptoms like those of sea-sickness, and I know of a nervous woman in whom these symptoms were always brought about whenever she heard a regular succession of noises; for instance, when some carpenters happened to be working on a house near by.

The power of the imagination as one of the causes of sea-sickness — that is, the subjective form — must not be overlooked. Whether it is more powerful here than in other diseases it would be hard to say, but the mental effort is so prominent that Mr. Bache, some years ago, wrote a very interesting article on the subject, in which he maintained that sea-sickness was wholly of mental origin. Wollaston started the theory that the blood rose and fell like the mercury of a ship's barometer during a storm, and that resulting mechanical congestion of the brain was the cause of sea-sickness. Stocker thought it largely due to a partial vacuum in the lungs, and Naylor suggested spasms of the capillaries.

The reason why one does not get sick riding horseback is explained by those who hold the semicircular canal theory to be that the motions here are not violent, and also that the rider can adapt his position to them as is not the case with the complex movements of a ship. Dr. Rosenbach, the German, who has lately written a very elaborate pamphlet on the subject, opposes this theory, saying that the motions of a ship are not, after all, greater than those of the rocking-chair, but he leaves out of count the movements up and down of the ship as a whole.

The explanation of the fact that lying down with the head low and the feet toward the stern affords relief is simply anatomical. "The ampulla of all the semicircular canals are on their anterior extremities, and in consequence, when the body is recumbent and the head low the endolymph and otoliths rest at the back of the canals — on the parts which are least sensitive." Riding backwards is distressing to some persons for the same reason, as here, of course, the otoliths drag forward and irritate the anterior and most sensitive parts of the canals.

Menière's disease confirms this theory. Here we have the reverse of sea-sickness, the irritation of the canals causing the unusual movements, while in sea-sickness, the movements of the body which result from the pitching of the ship, cause the irritation of the canals; and both are accompanied by vomiting. Then again, Professor James found another strong confirmation in noticing that all deaf mutes who were insusceptible to dizziness, on account of the impairment of their semicircular canals by disease, were also free

from sea-sickness. He also thought he had prevented an attack in himself while crossing the English Channel by setting up a counter-irritation in the canals.

The objection is always offered to every theory which attempts to explain the cause of sea-sickness, that these theories do not account for the fact that some persons are never sick on the water. This can not be considered a valid objection for so many things must be taken into account—the constitution of the individual, etc. But for my part, I have never known an instance where a person of average sensibility going to sea for the first time has not felt, at least, a little disturbed until he has learned to let his abdominal muscles take care of themselves without the intervention of his will.

The question arises how all the phenomena of seasickness have a tendency to pass away. They pass away for this reason: We learn to walk on shipboard without getting sick just as a rope-walker learns to walk on a high rope without getting dizzy. Through habit we learn to disregard those mistaken impressions which the semicircular canals send in—to be in a condition of "absent-mindedness" toward them. A sailor is in this condition so habitually that on returning to land after a long voyage he staggers for hours, even if he is not drunk.

Clinical Department.

A CASE OF GLYCOSURIA CAUSED BY A LESION PROBABLY SITUATED NEAR THE FOURTH VENTRICLE.¹

BY A. K. STONE, M.D.

A GIRL, thirteen years old, of good family and personal history, had an alveolar abscess and later an otitis media. This was followed by attacks of headache mostly located upon the left side. There was increase in thirst and in the amount of urine passed. During the headaches there was diplopia. When first seen she had lost about seventeen pounds of flesh, was weak, with persistent headache over the left eye, bowels constipated, skin harsh and dry. Paresis of the sixth nerve on the left side. Absence of all tendon reflexes. Urine: five pints, pale, and specific gravity 1,050; no albumen; sugar, nine per cent. by the polariscope. On limited diet she improved for a time, then the headaches became more severe and a general neuritis appeared. The muscles of the neck were tense. There was a return and exaggeration of all the reflexes and ankle clonus was present. During the starvation diet of the semi-conscious period, the sugar in the urine gradually fell until just before her death the analysis showed specific gravity 1,030; albumen a trace; sugar absent. Two days before death there was paralysis of the right side, with marked signs of irritation on the left side, followed the next day with paralysis of the left side.

As there was no autopsy the case was simply interesting from its probabilities. The persistent headache, the diplopia and hemiplegia followed by paraplegia, would point to the head as the seat of the trouble, while the glycosuria, the left diplopia and crossed right paralysis would point to the vicinity of

the pons, and the unexplained purulent otitis media would suggest that the lesion was tuberculous in origin.

Diabetes in children I found was confined to reports of one hundred and seventeen cases, while there are only eleven cases where glycosuria was proved by the autopsy to have been caused by tumor near the fourth ventricle.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

REGULAR meeting, Wednesday, February 17, 1892, Dr. E. G. CUTLER in the chair.

DR. GERTRUDE W. VAN PELT read a paper on CASES OF DYSPESIA, WITH TREATMENT BASED UPON AN EXAMINATION OF THE GASTRIC JUICE.¹

DR. A. L. MASON: I have been much interested in these cases. I notice she mentions that one patient did not get better until coffee had been abstained from. Is it usually found especially objectionable?

DR. VAN PELT: I think that usually increases the secretion of hydrochloric acid.

DR. MASON: Is it found necessary to give up coffee altogether in these cases?

DR. VAN PELT: In that one, where there was hypersecretion, it was given up for a short time only.

DR. MASON: I have supposed coffee was troublesome for dyspeptic patients very often, but it seems harder to make them give it up than almost any other article they use. They miss, I suppose, its stimulating effect.

DR. J. J. PUTNAM: I was quite interested in some of the cases which would ordinarily have been diagnosed as nervous dyspepsia. It seems undoubtedly true that in many of these cases, although there is no distinct evidence of catarrhal disease without such examinations as these, nevertheless there is sometimes relief from the use of the stomach-tube. I have recently had one such case where the relief has been very marked indeed. I should like to ask whether there is any real reason to think the small doses of hydrochloric acid actually, by their acting as an acid on the food, help in the digestion, or whether they simply act by stimulating the stomach.

DR. VAN PELT: I think in both ways, but chiefly by stimulating the stomach to secrete.

DR. PUTNAM: The quantity is so small it does not seem as if it could be of much use. I should like to ask whether the experiments that have been made in regard to the use of electricity in dyspepsia have shown anything more than a temporary increase of the secretion of gastric juice.

DR. VAN PELT: I think the impression is that the nervous tone of the stomach is improved, though I suppose there have not been sufficient experiments to show exactly what it can do.

DR. PUTNAM: I should like to ask whether electricity used in that way is distinctly more effectual than electricity used in other ways as a general tonic.

¹ Synopsis of a paper read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, February 17, 1892.

¹ See page 382 of the Journal.

DR. VAN PELT: Dr. Einhorn has published a number of cases and followed them up by that treatment alone, in which they seem to be distinctly improved. I did not mention that in some of my cases I used also central galvanization; and I did not notice the effect on the stomach from that treatment so much as I did from treatment applied directly to the stomach. The general tone of the system was improved, but the stomach was not so much improved by central galvanization as by electricity applied to the stomach.

Dr. Van Pelt stated, in answer to a question, that in the few experiments she had made, the direct effect was much greater with the electrode in the stomach than with electricity applied externally.

DR. LEIRMANN: Is the electrode applied directly to the wall of the stomach, or is water first introduced?

DR. VAN PELT: Water is first introduced. There would be no current unless it is dipped in water, on account of the hard rubber on the outside.

DR. KNAPP: I would like to ask if in any of the cases of galvanization or faradization of the stomach there were unpleasant symptoms. Some years ago I experimented on such cases; and I think at that time, galvanizing the stomach through the abdominal wall and faradizing, I occasionally got rather unpleasant symptoms. The patients complained of a good deal of pain in the stomach and nausea following the application of electricity. I never tried the intragastric application of electricity, but the external application with one electrode on the back and one over the stomach.

DR. VAN PELT: I have not noticed that.

DR. KNAPP: Did the patients bear comfortably a current of thirty milliamperes?

DR. VAN PELT: They scarcely felt it in the stomach at all.

DR. KNAPP: What size of electrode was used on the outside?

DR. VAN PELT: Four by six inches.

DR. KNAPP: What galvanometer?

DR. VAN PELT: Gaiffe's.

DR. KNAPP: I found it very difficult to get beyond ten milliamperes without getting burning of the skin. Some years ago Ewald advised the giving of hydrochloric acid, with the idea, in cases where it was diminished or absent, of getting into the system about as much hydrochloric acid as would be required in the ordinary process of digestion. He gave forty-five minims of the dilute acid in divided doses about an hour after eating. I should like to ask if this is given up.

DR. VAN PELT: So far as I know it is. It was not used in Paris or in Germany when I studied this subject. It was used in a good deal smaller doses.

DR. MINOT: I would like to ask Dr. Van Pelt if she has ever employed dilute phosphoric acid in the treatment of these cases, or had an opportunity to compare it with the hydrochloric acid.

DR. VAN PELT: I have not.

DR. MINOT: I suppose we all have used hydrochloric acid in patients labelled dyspeptic with more or less benefit, and also the phosphoric acid. I have used phosphoric acid in cases of difficult digestion. I can't say whether they were dyspeptics from too much or too little acid in the stomach, but in my experience it is really a very useful remedy indeed. I have seen some cases remarkably benefited by it where they have complained of pain, sense of weight or load in the epigastrium, and sometimes nausea. It is very diffi-

cult to mark out a line of cases that would be benefited by phosphoric acid or any other, but certainly a great many cases with those symptoms have, in my experience, done remarkably well.

DR. CUTLER: I wish to congratulate Dr. Van Pelt on the success of her treatment. I have had a certain amount of experience in this line, and I know how difficult it is to make a patient come and do what one likes. I think the cases reported have been extremely interesting.

DR. A. K. STONE read a paper on

GLYCOSURIA CAUSED BY PROBABLE TUMOR IN THE FOURTH VENTRICLE.²

DR. MASON: I had supposed that diabetes in young subjects is rapidly fatal. I think it is stated by Prout that out of six hundred cases but three were living at the end of ten years.

DR. MINOT: We see, however, a great many persons who live many years with the disease and suffer little inconvenience. I have a patient sixty-five years of age, under my care, who is in very good health, and he has been under observation several years.

DR. KNAPP read a paper on

THE PROVISION FOR PATIENTS WITH CHRONIC DISEASES IN THE CITY OF BOSTON.³

DR. ROWE: I think Dr. Knapp under-estimates the large amount of good work that is done by the public and private charities of Boston in the care and treatment of chronic cases. If the total number of beds used by chronic cases in the large hospitals were summed up, together with the beds devoted to similar cases in such institutions as the Channing Home, Adams Nervine Asylum, and others, they would make a very good showing for the work done in the city.

The ideal hospital for chronic diseases does not, as far as I know, exist in this country. I mean a hospital built on modern lines of hospital construction, where patients have the benefit of first-class specialists, a trained corps of nurses, and where the treatment is carried out in the same general method adopted in large general hospitals. Philadelphia, through its municipal hospital, which is practically an almshouse hospital, and the special wards at the University of Pennsylvania, does a larger amount of professional work than most other cities.

Dr. Knapp's objections to treating the chronic sick in connection with almshouses are perfectly good, and it is not right that we should rid ourselves of this sentiment. It would undoubtedly be a charitable and generous action, should the municipality of Boston establish a hospital of five hundred beds, where patients having chronic diseases could be intelligently and scientifically treated. Such cases would not respond to the ordinary medical treatment, but would come largely under the care of specialists. It is a fact, however, that it is not easy to get sufficient means to keep up with the demands upon the city in supplying beds and accommodations for those suffering from acute illnesses and injuries; and if we are unable to obtain funds for the treatment of acute cases, we can hardly expect the city to furnish means, at the present time, for those suffering with chronic diseases, other than that which is now given at the almshouses on the islands.

² See page 392 of the Journal.

³ See page 390 of the Journal.

In recently looking over the statistics of London hospitals, I find that outside of the Parish Poorhouse Infirmary, there are not, in all London, over three hundred beds intentionally devoted to the treatment of chronic diseases. At the Boston City Hospital there are always chronic cases which we are obliged to receive. We keep them until their immediate symptoms are relieved, and then transfer them to some other hospital or institution.

It follows, of course, that if the municipality of Boston should build a hospital for chronic cases, it would be only for those who have a legal claim upon the city, which means that a man must have lived in Boston five consecutive years and paid three poll taxes. A very large proportion of those who appeal for public relief on account of chronic sickness are those who have not this legal settlement. There is a large class of people, composed of old servants, artisans and laborers, such as Dr. Knapp mentions, who undoubtedly have a legal settlement, but the larger proportion of those who seek treatment for chronic diseases have not this legal settlement; and in case the city of Boston should establish a hospital for this purpose, such cases would not be refused.

There are two ways out of this difficulty; first, the creation of public sentiment, by repeated agitation of the question in various ways. Much can be accomplished by constant reminders of the wants of those who are powerless to help themselves. A good instance of this is the fact that it is only during the last two years that any decided action was taken in regard to establishing a hospital for epileptics, and yet by constant agitation, appointment of committees, and special work in aid of that cause, the Governor of the Commonwealth in his last inaugural recommends that provision be made for such purpose. It seems to me that the same policy should be pursued in regard to furthering the cause of the chronic sick. The second method would be to enlist the sympathies of some philanthropic person of means, who should endow a hospital, or a ward or wards in connection with a general hospital. This has been done in Philadelphia, in a building consisting of three wards devoted entirely to the treatment of chronic and incurable cases. This building was the gift of a philanthropic citizen, who specified that the wards should be used for this particular class of cases.

I think that a word of commendation is due to the management of the institution at Tewksbury, for the great improvement in recent years, not only in wards constructed on modern lines, but also in better medical care and improved nursing system now existing at the Tewksbury State Hospital.

DR. MASON: It has seemed to me for many years that there was no better field open to the rich philanthropist, in which to perpetuate his name, than to endow a hospital for the incurables in Boston. Almost every week a case comes up that does not want to go to the poorhouse, and should not go there; and it is extremely difficult to find a place for them, especially the males. The small hopes spoken of take but a small proportion of the deserving cases. Last year, I wanted to get boy with cardiac disease, who was totally unable to take care of himself, into some place where he could die in comparative comfort, and it took four or five months, I think. During that time, fortunately, the authorities at the City Hospital were able to allow him to remain. I have no doubt that many

such cases are turning up in Boston every week, and it is greatly to be hoped that some endowed institution will before long be instituted.

DR. PUTNAM: I think what the other gentlemen have said in favor of continued agitation is proper, and I wish we could put ourselves on record every year as making an appeal to the wealthy people to do what they can toward the establishment of hospitals of this sort.

There are one or two things to be said in regard to the present state of affairs. In the first place, I think we do not want to remove the pressure on the people to make provision for themselves as far as they can. Many people are only too willing to throw themselves on any one who is willing to take care of them.

As regards the matter of the city and the poorhouses, it should be said that another way is opening for the city to do a good thing in the line of hospitals, and that is in placing them within reach, and establishing a good staff of visiting physicians. It is true that patients in hospitals soon learn whether they are receiving first-rate medical attention, and also that, when they have come to believe they are getting first-class treatment, they no longer look upon the hospital as an institution for paupers, but rather as a place where people go to receive the best care during their illness; and when they have once come to regard it in this light they care very little if it be in any way connected with the poorhouse.

DR. JEFFRIES: I think it is extremely desirable that we should have something of the kind. In my own dispensary practice I am constantly meeting a large number of males who are crippled, more or less utterly helpless, for whom I cannot find any provision. It has always seemed to me that quite a number die from starvation.

DR. CUTLER: In the Old Men's Home and Old Women's Home, with both of which institutions I had something to do, it was not the custom to take in patients who were sick. The person must have a certain amount of health to be admitted. There was an age limit and a health limit.

DR. KNAPP: I did not mean to overlook the provision the City Hospital makes for chronic cases, but that is necessarily limited, and, furthermore, I know there are many cases which have no settlement.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON PEDIATRICS.

STATED Meeting, March 10, 1892, W. P. NORTHUP, M.D., Chairman.

EMBOLISMAL APOPEXY IN A BOY OF TWELVE YEARS.

The case was reported by DR. LEWIS SMITH. The boy had had rheumatism, but there was no cardiac murmur. The disease is rare at this age.

EMPYEMA IN CHILDHOOD: IS IT EVER PRIMARY? ITS RELATIONS TO PNEUMONIA AND TO PLEURITIS WITH SEROUS EFFUSION.

DR. HENRY KOPLIK read a paper on this subject. The etiology of pleurisies, both serous and sero-purulent, has been cleared up in many respects during the last decade, chiefly through bacterioscopic science. We know that children may develop an effusion in the

chest not as the result of constitutional causes alone, but of causes to which we also trace the development of pneumonia.

An estimate of an effusion as serous or purulent from simple inspection of the fluid without the microscope is highly unsatisfactory, and may lead to grave error in diagnosis and treatment. Children are prone to develop sudden effusions in the pleural cavity, and we are struck with the overwhelming frequency with which such effusion is purulent. It often happens that a clear, serous-looking effusion changes to a purulent one. This, however, is apparent rather than real. This we now know to be erroneous. All exudations apparently serous at first which subsequently become purulent do so from causes independent of external interference but inherent in themselves. Such a serous exudation, if examined microscopically, will be found to contain not only leucocytes and blood-cells but pus-producing micro-organisms. In children, acute exudations without micro-organisms are the exception. Such fluid is but one step removed from actual pus. The custom of refraining from informing ourselves as to the character of fluid in the chest by puncture for fear of contaminating that fluid is untenable.

Another point of importance is the question as to whether in children empyema may be primary; that is, whether it may occur without any connection with external infection or processes in the lung. While cases have been reported in which no other diseased condition was detected upon autopsy, they are extreme rarities, so much so that the writer in a large experience has never seen one.

Can the effusion be purulent from the outset? Undoubtedly it may be and frequently is so. The connection between pleurisy and disease of the lung is thus seen to be very close. It often happens that the illness begins with high temperature and all the symptoms of pneumonia, but after a few days the condition changes, fluid is detected in the pleura, giving the impression that an error in diagnosis has been made. In such cases, microscopical examination shows the same germ in the pus from the pleural cavity as is found in the lung, — the pneumococcus of Fränkel. The tendency of this germ to cause suppuration is well known, and it is found in other complications of pneumonia marked by pus, as meningitis. Its presence in empyema renders the close relationship of that disease to pneumonia very certain. They probably invade the pleura through the sub-pleural lymph spaces.

There are other exudations which still cause discussion, in which we do not find the pneumococcus but other germs of less marked selective tendencies, as the streptococcus and staphylococcus. There is reason to believe that these are also metapneumonic though the specific germ does not appear.

There are other cases complicating the secondary pneumonia and occurring without pneumonia in the infectious diseases. These effusions usually show the presence of the streptococcus.

THE DIAGNOSIS OF EMPYEMA,

was the subject of a paper by DR. S. W. BRANNAN.

As symptoms are obscure the diagnosis must rest chiefly on physical signs. It is easy when the classical signs are present — immobility of the affected side, loss of vocal fremitus, flatness on percussion, and diminished respiratory sounds. In young children, however, these signs are rarely distinct. There may be

no distention of the side whatever, and vocal fremitus, even if it can be obtained, is of no significance. Signs obtained by auscultation are often difficult to interpret. The normal respiratory sounds are so loud and the pleural cavity so small, that a considerable collection of fluid may cause but little change. Displacement of the apex beat is a sign of the greatest value. It is caused by no other condition. The two most constant signs are percussion, dulness and displaced apex beat. Exploratory puncture affords the most positive and in many cases, the only certain evidence of fluid. As to the character of the fluid, symptoms and signs are very uncertain guides. The needle is the only sure test. Pleurisy following pneumonia or complicating the infectious diseases and traumatic pleurisy is apt to be purulent. Though the needle often fails to obtain fluid when present, its use when the fluid does not quickly disappear, should never be omitted.

It has been alleged by Bacchelli that whispered voice is always present when the effusion is purely serous, but absent when sero-purulent or purulent. This is explained on the ground that sound is more readily transmitted by a homogeneous medium like serum. The certainty of this sign is quite doubtful.

OPERATION FOR EMPYEMA,

was considered by DR. J. H. RIPLEY, in a brief paper.

Operation should be performed as soon as a diagnosis has been made. Unless the amount of fluid is very great or the symptoms are urgent, a delay of a few days will do no harm. The location of an incision must depend largely upon the focal conditions. It may usually be made in the seventh intercostal space below the angle of the scapula. An incision an inch or more in length should be made down to the costal pleura, through which a small opening should be made.

Through this a director should be passed and the incision enlarged with a blunt-pointed bistoury. A drainage-tube of large size should then be passed several inches into the cavity, with a safety-pin attached to the outer end to prevent its slipping out of sight. If there is not sufficient space for the tube between the ribs, a portion should be removed subperiosteally. The wound should be dressed with oakum, which should be changed every day.

EXPANSION OF THE LUNGS IN CASES TREATED BY INCISIONAL DRAINAGE,

was discussed by DR. J. WEST ROOSEVELT.

The idea that fluid in the chest causes compression of the lung has been completely disproved. The lung tends to retract from the chest wall whenever fluid or air is present in the pleural cavity. It becomes retracted and condensed, but is compressed only when the amount of fluid is very large. Compression can only occur when the elastic recoil of the lung has been destroyed. Expansion of the lung to fill its normal position almost invariably follows early operation performed at the lowest part of the cavity where drainage can be free. The earlier the operation when pus is known to be present the better. The prognosis is far better with the chest full of air than with the chest full of pus.

Expansion is aided by the action of the other lung, especially when the glottis is closed as in coughing. The air is forced by the sound lung into the contracted lung during expiration, and expansion will be seen at that time rather than during inspiration. Granulation

tissue, by contracting, also aids in drawing the lung out to the chest wall.

Removal of sufficient rib to permit drainage is perfectly proper. Removal of rib for the purpose of causing contraction of the chest wall is almost criminal. It should not contract, and can only do so by interfering with the lung and obliterating space that the lung requires, and if properly managed, would undoubtedly occupy.

DR. KOPLIK said that while primary empyema was a possibility, it was very rare.

DR. RIPLEY said that in a child dulness was not always present, and but little fluid was required to produce bronchial breathing. Displacement of the apex was a valuable sign, but it was very difficult in some cases to detect the apex beat.

DR. ANDREW H. SMITH had often found a line of egophony just above the fluid, and regarded it as a valuable sign. He said that the lung in the empyema was contracted not compressed.

DR. HOLT referred to the absence of râles and friction sounds, where they had previously been heard, as a very valuable sign of fluid.

DR. EWART also referred to silence, where there had before been crepitations, as an important sign. He did not believe that Baccelli's sign was to be relied upon. A high or oscillating temperature, associated with a persistent dry cough for a long time, was a suspicious symptom.

DR. ROOSEVELT said that aspiration with the idea of expanding the lung by the suction was foolish. At the best, it is a waste of time.

DR. CAILLÉ objected to irrigation on the ground that it breaks up the adhesions.

DR. BERG advocated extenction of a rib to aid drainage.

DR. WINTERS believed that most undiagnosed cases died from exhaustion or tuberculosis, but encysted cases often recovered. He had never seen a case of pure serum changed to pus. Serous effusions were not uncommon in connection with the infectious diseases. He had frequently seen cases of empyema in which a diagnosis of pneumonia had been made at the outset. He had formerly thought that an error in diagnosis had been made, but now believes that that was the usual way in which empyema developed.

Recent Literature.

The Treatment of Typhoid Fever, and Reports of Fifty-five Consecutive Cases with only One Death. By JAMES BARR, M.D., Physician to the Northern Hospital, Liverpool, etc. Introduction by W. T. GAIRDNER, M.D., LL.D., etc. London: H. K. Lewis. 1892.

The author dedicates this book, which follows a paper published a year or more ago in one of the London medical weeklies, to his former teacher, Professor W. T. Gairdner of Glasgow. Professor Gairdner contributes an introduction, in which he says: "If heat-abstraction is an object of so great importance, why not do it continuously, but in such a way as shall cause no distress at the time, shall avoid violent transpositions, and allow of natural rest, and, as far as possible, a normal periodicity of all the functions, undisturbed

by the perpetual interference at all hours of the day and night, which characterized the earlier antipyretic methods?"

To this the disciples of Brand would probably reply: But, it is not the abstraction of heat we are now after, it is the action on the nervous centres; and to secure this, things must be made lively for the patient, cold-tubbing must be kept up briskly as often as the temperature rises above a certain point, whether by day or night.

Whatever the cause, whether accident or the therapeutic effect of his use of continuous immersion of severe cases in water, Dr. Barr has had excellent results in a series of seventy-one successive cases, there having been only two deaths. Of course, the number is too small for positive conclusions. There are two things, however, which deserve notice, the continuous bath was only used in severe cases, and the patients, apparently, were not thus treated for typhoid fever and pronounced cured, before the diagnosis could be fairly established.

His rule is as follows: As long as the temperature in the patient's mouth is over 100° F. the temperature of the tank need not rise above 90° to 93° F., but as the body temperature approaches the normal so should the tank temperature. One patient was immersed thirty-one days. Some of the cases which recovered were very serious cases.

The book is an octavo of about 200 pages. Those interested in the treatment of typhoid fever (and what practitioner is not!) should read it, and so should the admirers of Brand's method.

Principles of Bacteriology: A Practical Manual for Students and Physicians. By A. C. ABBOTT, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. Octavo, pp. i-viii, 13-263. With illustrations. Philadelphia: Lea Brothers Co. 1892.

The demand for a book that would give a summary of the best of the methods of bacteriological research has been increasing for some years, and it has been partially supplied by various manuals published during the last year. None of these have seemed to be just what was needed for laboratory teaching or a guide for the single worker, until the publication of Dr. Abbott's work. This seems to furnish very nearly what is required for those to whom the German textbooks are not accessible, and for laboratory use with personal instruction added will be exceedingly useful. That some such summary of methods is needed is shown by the increase of attention devoted to the subject of which it treats, which is obtaining a foothold in the required courses of the best medical schools.

The feature of suggesting work to be carried out by the beginner, adds to the value of the book for instruction.

H. C. E.

Physical Diagnosis and Practical Urinalysis. By JOHN E. CLARK, M.D. Detroit: The Illustrated Medical Journal Company. 1890.

This little book suffers, as all such books must, from the author's desire to condense his material into too small a space. It is too much to expect that the symptoms of any important disease can be adequately described in a dozen lines. Criticism should be directed rather to the plan of the book than to the way in which the author has carried this out.

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RECENT RESEARCHES ON BILIARY INFECTIONS.¹

THE primary acute biliary infections are divided into such as are spontaneous and protopathic (supervening without previous mechanical lesion), and the deuteropathic, which are constituted by biliary infections accompanying (as a part of) and complicating general infections. The bond which unites them all is the etiological bond of infection.

Primary acute biliary infection is mild, moderate or grave :

(1) The mild form is the catarrhal icterus, with which nearly every one is familiar from his own experience.

(2) The second form of medium intensity is characterized by more violent symptoms, by the relapsing type of the fever, by the albuminuria, the haemorrhages and the augmentation of the volume of the liver and spleen. It is, in fact, the febrile icteroid affection so well described by Weil, in 1886, though previously known to Mathieu and Lancereaux, and made the subject of a monograph by the latter in the *Revue de Médecine*, 1882. Since the publication of Weil, much attention has been called to this form of icterus by the papers of Goldschmidt, Hueber, Fiedler, Kirchner, and other German observers. Mathieu, who also claims priority over Weil in the discovery and description of this disease, which seems to have been improperly named after the German pathologist, thus comments on the pathogenicity of this affection (the remark equally applies to other biliary infections): "We must admit the possibility of the ascension of pathogenic agents from the intestine into the bile-passages, and their subsequent penetration into the blood, just as the bacteria of suppuration may ascend the ureters from the bladder and invade the renal pelvis, the calices and the uriniferous tubules."

¹ Concluded from No. 15, page 273.

(3) Lastly, we have the grave form of acute biliary infection, which is characterized by the intensity of the nervous symptoms, by the haemorrhages, the intense prostration, and the profundity and extent of the hepatic lesions, which led Rokitansky, in 1843, to designate it as *acute yellow atrophy of the liver*. This is the grave essential icterus of Ozanam, the typhoid icterus of Lebert, the pernicious icterus of Wunderlich, the essential haemorrhagic icterus of Monneret, etc. Frerichs, in his "Clinical Treatise" (1858), gives a good description of this disease; but Budd, thirteen years before (1845), in his then classical work, described it nearly as well under the title, "Fatal Jaundice."

This grave infection, according to Dupré, may appear as an isolated affection, independent of any anterior lesion of the liver, or it may terminate a previous hepatic affection (cirrhosis, lithiasis, cancer); and it is possible for the milder forms of jaundice to pass, by an insensible transition, into this grave and fatal form.

We have not space in this review for a consideration of the deuteropathic forms of biliary infections, or even of the chronic forms. The pathogenic agents of the biliary infections are multiple; in fact, there is not one infectious germ but may find in the biliary passages or gland-substance favorable conditions for its depredations. Perhaps more frequently the staphylococci and the streptococci of abscesses and of suppuration — the septicæmic cocci — are concerned in the infection.

We do not yet know precisely what conditions annihilate the natural resistance of the bile and the gall-ducks to septic agents, so that even simple catarrhal states of the duodenum, with their entire bacterial outfit, may be propagated upward into the liver. The comparison with the urinary bladder holds good: in healthy states, infection by a foul catheter is not easily conveyed, while in morbid states (stricture, hypertrophied prostate) a microbe invasion is almost certain to follow the introduction of a dirty catheter.

It is less difficult to understand the infection of the liver by specific bacteria during the prevalence of exhaustive diseases. In numerous instances on record, where in the course of typhoid fever the liver has become secondarily infected by migration of the Klebs-Eberth bacillus from the duodenum, the bile and portions of the hepatic parenchyma have been examined after death, for microbes, the typhoid bacillus has been identified by its form and its reactions to staining-fluids, has been cultivated, and inoculated in animals with results sufficiently confirmatory of the previous identification.

Chronic biliary infections lead to hypertrophic cirrhosis. Into this subject we have not now time to enter. There is a common form whose onset is spontaneous, and whose direct causation is little understood; and a secondary hypertrophic cirrhosis following biliary obstructions, in which the infectious element plays a certain part. After a variable time, the irritative

process, whose seat is the biliary network, engenders angiocholitis and peri-angiocholitis with an enormous connective-tissue growth, whose final result is an atrophy of the glandular substance as complete as that which attends ordinary cirrhosis.

CAUSES OF DEATH IN ITALY FOR THE YEARS 1889 AND 1890.¹

This very complete summary published by the Italian Minister of Agriculture, Industry and Commerce, contains the vital statistics of the Kingdom of Italy, so far as relates to the causes of death, in full for the year 1889, with a summary for the year 1890.

The estimated population for 1889 upon which all the ratio of mortality are based for that year, was 29,969,654.

The death-rate per 1,000 for 1889 was 25.63. From certain specified diseases the mortality was as follows, per 10,000 of the population :²

	1889.	1890.
From small-pox	4.5	2.4
" measles	4.6	4.8
" scarlet fever	2.2	2.5
" diphtheria	6.1	4.1
" whooping-cough	4.1	4.3
" typhoid fever	7.6	6.8
" malarial fevers	5.4	5.2

The deaths from hydrocephalus were 103 in 1887, 106 in 1888, 118 in 1889, and 75 in 1890.

	1889.
Dysentery	1.9 per 1,000
Typhus fever	0.15 "
Puerperal fever and other maladies of parturition	2.04 "
General tuberculosis and phthisis pulmonalis	14.3 "

There were 3,113 deaths from pellagra.

The deaths from violence are very thoroughly classified, and amounted to 13,199 or 4.4 per 10,000 of the population, of which 3.4 were by accident, 0.49 by suicide, and 0.49 by homicide.

By occupations, the guardians of public funds, and soldiers, furnished the highest ratio of suicides, and farmers and weavers the least.

Statistics of duels are subject to careful record. Of these, there were 2,759 in the ten years ending with 1889, and 177 in 1890. Out of this whole number only 52 were attended with fatal results, or 1.7 per cent. The greatest number of duels were fought in the three summer months, and the least in November and December. The causes of duels were quarrels, insults, newspaper criticism (these furnish the greatest number), politics, intimidation, assaults and jokes. Military men, journalists, lawyers and students furnished the greatest number of duelists, and there were but very few physicians among the number.

Statistics of 1,089 hospitals are also presented, in which 339,873 patients were treated in 1887, and of

932 hospitals and 311,575 patients in 1888. The deaths in these hospitals were 40,683 in 1887 and 38,481 in 1888, of which number 365 in 1887 and 489 in 1888 were nearly dead at the time of their admission. The most important causes of admission were as follows in the order of their greatest number: Malaria fevers, diseases of the trachea, larynx and bronchi, contusions and wounds, diarrhoeal diseases, tubercular diseases, gastritis, abscess and skin diseases, pneumonia, pellagra, typhoid fever and fracture.

Some tables are also presented giving the ratio of mortality from different infectious diseases in other European countries.

THE REGULATION OF MEDICAL EXPERT TESTIMONY.

At a meeting of the New York Society of Medical Jurisprudence and State Medicine, held April 14th, Dr. Benjamin Sachs read a paper on the subject "What the Law can do to mitigate the Evils of Medical Expert Testimony." As a consequence of experts being called in each case by interested parties, he said, the facts bearing on the case were never fully and impartially stated to the man who was expected to give a decisive opinion; and this was unjust both to the physician and to the law. As a remedy, he suggested that a standing commission of physicians and surgeons, selected from every department of profession, and, of course, including analytical chemists, should be appointed by the courts to serve on all cases, to which they could only be summoned by an order of court. To this board should be submitted all the testimony on which they were to give an opinion. At present, he went on to say, all expert testimony is verbal, and this was necessarily an evil, since a clever physician fully competent to answer the questions fairly and plainly stated, if unused to law courts and the prevailing system of cross-examination, might become so confused as to either contradict himself flatly or appear uncertain on the most vital points. The remedy for this was to compel all expert testimony to be submitted to the court and to the jury in writing.

Another evil mentioned, and one which it was suggested had been emphasized in recent trials, was that cross-examination of experts is largely made up of personal abuse, ridicule and purposely misleading questions and statements. The personality of the witness should have nothing to do with the case. The remedy suggested for verbal testimony would cover this. In conclusion, Dr. Sachs recommended that a committee from the Society, to consist equally of representatives from the several professions represented in it, should be appointed to confer as to the most feasible way of arranging for the establishment of such a board as he had mentioned.

Similar propositions have already fallen several times in this State and elsewhere upon the unpropitious ears of legislative committees. They will have very unusual good fortune if they get beyond a committee-room.

¹ *Statistiche delle Cause di Morte in tutti i Comuni del Regno. Confronti con alcuni stati esteri. Anni 1889 e 1890.* pp. xvi, 182. Roma, 1-91.

² The general death-rate is usually reckoned as a ratio per 1,000 and not from each disease per 10,000 of the living population.

³ The highest ratio in 1889 from malarial fevers was, in Sardinia, 29.1, while it was of rare occurrence in the northern provinces of the kingdom.

MEDICAL NOTES.

UNITED STATES CONSULS ON THE LOOKOUT FOR TYPHUS. — The Acting Secretary of the State has, by request of the Treasury Department, given instructions to United States consular officers in Russia to forward immediately special reports concerning the existence in their districts of typhus fever, using the cable when necessary.

CHOLERA IN ASIA MINOR. — Under date of February 19th, the United States Commissioner writes that the epidemic of cholera has entirely disappeared from Turkey in Asia. He adds that the disease has not ceased by sanitary steps taken by the authorities, but on the contrary, has disappeared of itself.

EPIDEMIC DYSENTERY OF JAPAN. — Ogata has studied the epidemic dysentery which every year appears in Southern Japan, and has succeeded in separating and cultivating a short, small bacillus, which is probably the specific organism of the disease.

THE MEASLES BACILLUS. — It is reported by cable that Dr. Canon of the Moabit Hospital in Berlin, has demonstrated a specific bacillus of measles.

THE PURIFICATION OF AIR. — Sir Douglas Galton states that the only way in which, so far as he has found, the removal of dirt and fog from a large volume of air required for ventilation has yet been practically effected, is by means of a wet screen, as used at the Western Infirmary, Glasgow. The air is here renewed six times in an hour, and is first filtered and washed by being passed through a screen of cords formed of horse-hair and hemp, which is kept continually wet, and which effectually removes all dust and soot from the air. An automatic flushing tank discharges twenty gallons of water over the screen every hour, and thus washes away any substances which have adhered to the screen. The action of such a screen, it is said, removes every vestige of fog, renders the air beautifully clear and bright, and might be easily applied to private houses.

DENHOLM v. TAIT. — This libel action against Mr. Lawson Tait, which has recently come before an English court, has created much comment among medical men in England. The particulars are briefly as follows: Dr. Denholm had attended a patient for several years for fibroid tumor. The Apostoli treatment by electrolysis had been tried and on one occasion an accident occurred with the electrodes which resulted in a vesico-vaginal fistula. Finally, Mr. Tait was consulted, who removed a tumor by abdominal section which weighed twelve pounds. The patient died within forty-eight hours. Mr. Tait wrote a letter expressing the opinion that death was attributable to hemorrhage due to sloughing, as a result of the electrical treatment. Dr. Denholm, hearing of the existence of this letter, obtained a post-mortem, the results of which seem to be more or less doubtful, but were stated to show that death was caused by peritonitis. A suit for libel was begun, and argued before a

jury, but before it was finished the case was settled out of court and withdrawn.

BOSTON AND NEW ENGLAND.

DEATH-RATE IN BOSTON FOR MARCH. — There were 995 deaths in the city during the month of March as against 813 for the corresponding month last year, making the death-rate 26. The deaths due to diphtheria were 35, scarlet fever 28, consumption 114, bronchitis 55, pneumonia 119.

THE CARNEY HOSPITAL APPROPRIATION. — It appears to have aroused much excitement at the State House. In spite of the failure of the Committee on Public Charitable Institutions to report the bill, the house took it up and passed an appropriation of \$10,000. It now waits the action of the senate. This amount has been given in the two preceding years.

THE BOSTON PUBLIC INSTITUTIONS FOR THE INSANE. — The committee appointed by the Mayor to investigate certain of the public institutions for the city, have recently submitted their report. The committee consists of Frank Morison, Thomas F. Ring, Annette P. Rogers, Chas. P. Putnam, Elizabeth M. McCarthy, Elizabeth G. Evans and Morton Prince. With regard to the condition of the quarters provided for the insane at South Boston and Austin Farm, the commission says that both are overcrowded, while the condition of things in South Boston is very bad. The recommendations are, that the chronic insane be located upon Austin Farm, additional buildings being erected and additional land acquired. The Insane Hospital at South Boston is an old building, not fit for its present use, and it is inexpedient to attempt to re-construct it, but it would seem best to continue to use it until the city is ready to build a hospital on a piece of ground quite separate from Austin Farm, and suitable for the class of patients for which it is intended. The commission is inclined to believe that for the present a hospital for 150 beds, including a building for fifty excited patients, would answer all immediate demands. More land for the erection of this hospital should be purchased. For this purpose appropriations aggregating \$273,000 are recommended. A further recommendation is made of an additional dormitory at Austin Farm. The committee are in favor of a plan to use the Austin Farm for acute cases, altering the present buildings and adding others for the purpose of establishing a true hospital, and purchasing a large tract of land, two hundred acres or more, in a rural district, on which to build the asylum for chronic insane. The cost of such a place would be \$307,000. This allows for fifty-eight more patients than the first plan. Either of these plans vacates the South Boston Lunatic Asylum, which is much needed for the additional cells to the house of correction. In conclusion the commission comments severely on the manner in which the city of Boston has of late years provided for its insane. Other recommendations in the report are a separate parental school, as requested by the school committee, and an appropriation of \$90,000 for six hundred new

cells at the House of Industry at Deer Island. The Mayor, in transmitting the report to the Aldermen, says, "As to the choice between the alternative plans for improved accommodations for the insane suggested by the committee, my personal preference would be for that plan which contemplates buying a large area of land on the outskirts of the city, or without its limits, rather than to get a smaller area in the immediate vicinity of Austin Farm. I would suggest that I be authorized to advertise for land, situated within fifteen miles of the City Hall, and convenient of access from the steam railroads. If in this way an area of two hundred acres of land could be obtained at a reasonable price, we should be, for the first time in our municipal history, in a condition to supply the wants of the present and the probable needs of the future, in respect to the proper care and treatment of the insane."

THE MASSACHUSETTS COLLEGE OF PHARMACY.—R. W. Greenleaf, M.D., has been appointed Professor of *Materia Medica* and Botany, in place of Dr. C. P. Pengra, deceased. G. F. H. Markoe, Ph.C., has been appointed Professor of Theory and Practice of Pharmacy, *vice* E. L. Patch, Ph.C., resigned.

SEA-SHORE HOME FOR INFANTS.—The inhabitants of our suburban towns seem to be most energetically opposed to having this institution as a neighbor. Two years ago it was voted out of Winthrop. Recently, all arrangements were made to transfer it to Quincy this spring, but now the citizens of Quincy have declined to receive it. The only place in which it is not likely to arouse opposition appears to be on one of the islands in the harbor.

PHYSIOLOGY IN THE PUBLIC SCHOOLS.—In the report of the Massachusetts State Board of Education recently issued, Mr. G. H. Martin comments upon the teaching of physiology and hygiene under the law of 1885. This law had special reference to the effects of stimulants and narcotics upon the human system, and the instruction was expected by some of the promoters of the law to inculcate in the youthful mind an abhorrence of intoxicating liquors. Mr. Martin arrives among others, at the following conclusions: The outcome in accurate knowledge resulting from much of the work done is meagre and out of proportion to the time spent upon it. Many false impressions are left in the minds of the students, physiological details are not suited to young children. However defective the instruction may be, the sentiment of the schools is sound—the conviction that alcohol and tobacco are bad things to use seems universal, where exaggerated notions of the effects of stimulants have been acquired, there is danger of a reaction of sentiment in the light of after-knowledge. Among the suggestions which he makes are, that teachers prepare this subject with more care and see that their statements are true, and by frequent tests ascertain that their teaching is properly comprehended, and that the use of text-books should be limited to the older pupils; the moral and

social effects of the abuse of intoxicants should be made more prominent, and abstinence be advised for other reasons than such as concern only the body.

NEW YORK.

DEATHS FOR THE WEEK.—During the week ending April 9th there were 983 deaths reported in the city, an increase of 109 over the previous week. No deaths were caused by small-pox, but this disease, through a failure to report the cases, either from negligence or through inability to diagnose the disease by the medical attendants, or from other causes, increased to some extent. On April 11th it was stated that since January 1st, 77 cases of small-pox with 10 deaths had been reported. Since then, a few other cases have been reported. During the past week three or four new cases of typhus fever have been reported, the most of them among patients who applied for admission to the city hospitals.

MANAGEMENT OF HOSPITALS AT NORTH BROTHER ISLAND.—At a meeting of the Board of Health held April 12th, the following resolution was adopted: "*Resolved*, That upon due consideration of the testimony taken at an investigation in respect to the management of Dr. F. R. Percival, of the Riverside Hospital, at North Brother Island, in connection with typhus fever cases, this Board concludes that the persons sick with typhus fever have been properly treated and cared for, and that no further action is necessary in the premises at present." Soon after the investigation referred to was commenced, Dr. Percival was removed from the charge of the typhus fever cases and transferred to the charge of patients ill with other contagious diseases at North Brother Island, and he is still on duty in the latter position.

A CASE OF SMALL-POX IN A GENERAL HOSPITAL.—Through the failure of an ambulance surgeon of the Seney Hospital to recognize the true nature of the case, a patient suffering from small-pox was on the night of April 13th placed in a ward of the hospital which contained fifty or sixty other patients; and the fact of his having small-pox was not discovered until the following day, when there naturally resulted a considerable panic in the ward.

SUICIDE UNDER Puerperal Mania.—A young married lady, who was sent to New York from Charleston, S. C., to be confined, on account of special difficulties in her case, recently threw herself from a window on the third floor of a private hospital while suffering from puerperal mania, and was instantly killed by fracturing her skull.

THE WEST INDIES AT THE PAN-AMERICAN CONGRESS.—Dr. Wm. F. Hutchinson has arrived from the West Indies, where for the past two months he has been exciting interest among medical men in the Pan-American Congress, to be held in Washington in September next. He visited St. Thomas, Santa Cruz, St. Martins, St. Kitts, Antigua, Trinidad and Jamaica, and in every place he was assured that the West Indies could be well represented at the gathering.

29istellamp.**THE VENICE CONFERENCE.**

THERE has recently been in session in Venice, a congress composed of delegates from fourteen European powers, with the object of establishing international sanitary control of the Suez Canal, in order to prevent, as far as possible, the importation of cholera into Europe. Although the official report has not yet been published, it is understood that all ships coming through the Canal will be classified in three categories.¹ In the first are ships which have no shadow of suspicion; these will pass through the canal without hindrance. The second category will consist of ships that have sailed from a port where cholera prevails, even though there may not be any case of cholera for several days previous to the departure of the ship. These suspected vessels will simply be disinfected. Very powerful and large disinfecting stations are to be established, and bedding and clothes will be purified by superheated steam under pressure. The third category consists of ships in which cases of cholera have occurred during the voyage. These ships will be more thoroughly disinfected and a delay not to exceed five days may be demanded. It is proposed to establish a sanitary department at Suez and to modify the sanitary council of Alexandria. Four medical men will be permanently on duty at Suez. Expenses are to be paid by a tax of twenty cents on each passenger. The English proposition that contaminated vessels should be allowed to pass through the canal on condition that they had no communication with the shore and that they were bound to an English port, was rejected. Ten nationalities have signed the agreement, delegates of the other four having referred the matter to their respective governments.

A MONUMENT TO THE LATE SAMUEL DAVID GROSS.

The friends and admirers of Dr. Gross have desired to erect to his memory such a monument as will commemorate his life and character.

To further this most praiseworthy object, the American Surgical Association, at its last session, adopted the following resolution:

Resolved: That the President be empowered to appoint a committee with authority to confer with the friends and admirers of the late PROF. SAMUEL D. GROSS, and with the *profession at large*, for the initiation of a movement on the part of the Association, having for its object the erection of a monument to DR. GROSS in the City of Washington, D. C."

The subjoined committee from the Association has been appointed, with authority to confer with the *profession at large*, and solicit subscriptions.

It is not the purpose of the American Surgical Association to claim the honor of erecting this monument to the memory of one of its most distinguished Fellows; but rather is it its intention to initiate a movement in which the entire American profession should feel an equal interest: because Dr. Gross was of no exclusive faction, but a leading member of the whole profession.

Hence it is, that each member of the committee is instructed to appoint sub-committees in his own State,

¹ Lancet, April 24.

irrespective of fellowship in this, or any other Association, which sub-committees will aid him in the collection of contributions to the general fund. Any contributions may be sent to DR. JNO. B. ROBERTS, 1627 Walnut Street, Philadelphia. He is the Treasurer of the Association, and will receipt for the same, and from time to time acknowledge subscriptions through the columns of the *Journal of the American Medical Association*. In the event of a failure to collect a sum sufficient to complete the monument, the contributions will all be returned to the subscribers.

J. R. WEIST, M.D., *Chairman.*

C. H. MARTIN, M.D., *Secretary.*

Committee.—DRS. WM. T. BRIGGS, TENNESSEE; LEVI C. LANE, CALIFORNIA; SOLON MARKS, WISCONSIN; L. S. PILCHER AND A. VANDERVEER, NEW YORK; JAMES McCANN, D. HAYES AGNEW AND J. EWING MEARS, PENNSYLVANIA; S. H. WEEKS, MAINE; HUNTER McGUIRE, VIRGINIA; L. McLANE TIFFANY, MARYLAND; N. P. DAUDRIDGE, OHIO; H. H. MUDD, MISSOURI; J. COLLINS WARREN, MASSACHUSETTS; B. A. WATSON, NEW JERSEY; D. W. YANDELL, KENTUCKY; N. SENN, ILLINOIS; CHAS. B. NANCREDE, MICHIGAN; W. H. CARMALT, CONNECTICUT.

APPENDICITIS.

DR. CHARLES McBURNEY lately discussed six cases of appendicitis before the New York Academy of Medicine,¹ and reached the following conclusions:

"The feebleness of old age, unusual obesity, complicating diseases, and unmanageable over-distension, may justify the surgeon in refusing to offer with the aid of the knife the relief perhaps most urgently called for. Probably the most conservative practitioner, knowing the lesion which existed in R. W.'s case would not advise, under similar circumstances, the trusting of his patient's life to any medical measure known to science. The extraordinarily great variety in the signs and lesions of the disease under discussion will probably prevent us from ever formulating a set of rules such as some writers delight in referring to as routine practice. It will, however, always be good routine practice to study critically every individual case of a disease which belongs to a class that often enough destroys life, and to be willing to carefully weigh the value of experience even if contributed by those who observe from a different standpoint.

"Let us remember that it is not so very long ago, quite within the clear recollection of many of us, that we were taught that idiopathic peritonitis was a common enough disease, and that peritonitis in general was to be treated by medical measures only. Since then we have added to our store of knowledge, first by one observer and then by another, much valuable information in regard to the causes of peritonitis, and the possibility of attacking these successfully. The surgeons, and chiefly those of America, deserve the credit of having added most largely to our knowledge of appendicitis, the most frequent of all causes of peritonitis in the male. To them chiefly belongs the credit of having demonstrated the practicability and safety of treating this disease by the incomparable method of removing its cause. If we would accomplish the most by our discussions on this topic, then physicians and surgeons must join hands, the physicians accepting the fact that the surgeon does not always wish to operate, and the surgeon gladly stepping aside when he sees

¹ Medical Record, April 16, 1892, p. 421.

that success can be attained by his colleague's gentler methods.

"Five years ago we stood a little timidly on the edge of the new country, determined to go on; but dreading the discovery of hidden dangers, perhaps of insuperable difficulties. To-day I do not hesitate to say that never in the history of surgery has a major operation so soon established itself in so strong a position, so well supported by sound knowledge and unimpeachable facts as the timely operation for appendicitis."

Dr. McBurney seems scarcely conscious that the impulse to explore this new country, upon the edge of which he and others stood timidly five years ago, came from a physician!

DR. HENRY INGERSOLL BOWDITCH.

THE following abstracts are from an obituary of Dr. H. I. Bowditch by Dr. W. T. Gairdner, of Glasgow, which appeared in the *Edinburgh Medical Journal* of April :

Although the number of those who made the acquaintance of this distinguished physician on his visit to this country in 1861 must now be sadly diminished, it may be permitted to us in this journal to offer a brief tribute to his memory, from one who is perhaps the only hospital physician now in a position to do so among those who gave a hearty greeting to Dr. Bowditch in the Edinburgh Royal Infirmary more than thirty years ago. The writer was thoroughly attracted at that time, not only by what appeared to him an eminently noble personality, but also by the narrative of successful results in the treatment of pleuritic effusions by the method of what was then called *Suction*, although under the more pretentious name of *Aspiration* it came, many years later, to be made a *boom* in Paris without the slightest reference to the first employment of the method in America. Dr. Bowditch always attributed the invention of this method and the appropriate instrument to Dr. Morrill Wyman of Cambridge, Mass., who performed his first thoracentesis by suction in 1850. But neither Dr. Wyman nor Dr. Bowditch seem have cared to put in a claim of priority, although, at the date of a most interesting and lucid letter to the author of this notice, bearing date May 22, 1862, no fewer than 160 operations had been performed upon 85 persons, and with remarkably favorable results. Dr. Bowditch was even then, although in the prime of life and vigor, by no means a young man, and the steady, persistent, and indeed brilliant work he had done connection with this subject deserved a better fate than to be lost sight of amid the struggles for *éclat* of a young French hospital physician not at all careful as what had been done before him. Dr. Bowditch made converts in Edinburgh in those days, and at least two of the hospital staff began to use thoracentesis by suction from that time onwards. One of the two is the writer of these lines, and Dr. Bowditch has been known to say that Dr. Budd of King's College, London, and the present writer were the first in this country to adopt the improved procedure. But Dr. Bowditch, though a most eminent thoracentesist, was far more than this. He was a most admirable and cultured physician in all respects, and not only showed in diagnosis and in treatment a wide and well-ordered knowledge and a cultivated judgment, but he appreciated also as comparatively few then did, the importance of the preventive service of humanity in its relations to the curative. The researches which he first brought before the public in 1862 into the connection of moisture in subsoils, and the effect of drainage, or the want of it, on the local distribution of phthisis in Massachusetts, became stimulus to further fruitful researches, which in England were undertaken at the instance of the medical officer of the Privy Council, by Dr. George Buchanan of London, now the chief of the medical service under the Local Government Board. Had Dr.

Bowditch done nothing else but these two things, his merit would still have been great; but in fact his was a most busy and valuable life, from many different points of view.

THERAPEUTIC NOTES.

A DELICATE TEST FOR ALBUMIN IN THE URINE.—Spiegler¹ suggests the following formula for the discovery of albumin in the urine as being the most delicate test we possess:

B	Hydrog. chlor. corrosiv.	8 parts.
	Acid. tartar.	4 parts.
Aq. dest.		200 parts.
Seach. alb.		20 parts. M.

The test-tube is filled one-third with the reagent. The urine is filtered and made strongly acid with acetic acid. It is then allowed to flow down the side of the tube, drop by drop, until it lies in a layer over the reagent. If albumin is present, a sharp white ring is seen lying between the two layers of fluid. If it is necessary to test heavy diabetic urine, more sugar may be added to the reagent, in order to raise its specific gravity. It is necessary to decompose any carbonate that may be present, in order that it may not form a precipitate with the sublimate. But the precipitate may be recognized by the fact that when shaking the liquid the apparently caseous precipitate will disappear and the fluid become clear.

CAMPHORATED OIL.—Taussia² states that he had used camphorated oil with good results in many cases of influenza in which collapse from cardiac paralysis appeared to be imminent, and in pneumonia, typhoid, etc. He gave the drug dissolved in oil of sweet almonds in the strength of one to two, and sometimes four to five per cent. Essence of peppermint was useful in disguising the taste. Liberal doses (two to four grammes *per diem*) were always given; the remedy was always well borne, and no disagreeable effects were observed. The remedy should be given before the patient is in *extremis*, when an active stimulant and expectorant is required, and when it is not contraindicated by the existence of great cerebral excitement. In cases of pneumonia, broncho-pneumonia, and typhoid fever, the drug produced increase of arterial pressure, freer expectoration, and a feeling of physical well-being which lasted a considerable time. Taussia insists that only the best Japanese camphor should be used, the artificial preparation having, according to him, no therapeutic value.

Correspondence.

BOARDING OUT THE INSANE.

PHILADELPHIA, April 14, 1892.

MR. EDITOR:—In your review, April 7th, of the Thirteenth Annual Report of the Massachusetts State Board of Lunacy and Charity, you are good enough to refer with favor to my paper upon "Lunacy Administration in Scotland"; but you remark, that, although I "touch upon the improved care received in the homes of such patients in this country" [the boarded-out insane], you "miss the warm advocacy of the measure and of its development in this country which my former reports and other contributions would lead you to expect."

¹ Wiener klinische Wochenschrift, January 14, 1892.

² British Medical Journal.

As many of my friends have made similar observations, I deem it proper to say that the State Board omitted to publish nearly all that part of my paper which spoke of the further application of the Scotch system in Massachusetts.

I have not changed my views regarding the care of the insane in private families.

It has never been my belief that the boarding-out system would relieve the lunatic hospitals and asylums to anything like the extent which some, unacquainted with the practical care of the insane, supposed possible; and it is my opinion that unless there is a change in the lunacy laws of Massachusetts, patients cannot be boarded out from the hospitals in greater numbers than the Board of Lunacy and Charity is now doing.

Although I am not now a resident of your State, I trust I may be permitted to say a few words upon this matter, for my former connection with the charities of the Commonwealth has acquainted me with their administration; besides other communities are interested in the family care of the insane.

The chief obstacle in the way of the boarding-out system in Massachusetts is, to my mind, the practice by overseers of the poor, of confining the insane in almshouses, more than 800 being so placed; and your characterization of that part of the Board's report dealing with poorhouses, as "the usual depressing chapter," is a truthful reflection.

There are, as I have stated elsewhere, only sixteen almshouses with lunatic wards, in Scotland, which can, by any possibility, be compared with Massachusetts almshouses; and in that country license is not granted for the care of less than sixteen lunatics in one almshouse, all of which establishments are subject to rigid rules made by the General Board of Lunacy, which has supervision over them. No patients suitable for family care are allowed to remain in Scotch poorhouses.

Were the same rules and restrictions to be applied in Massachusetts that are in operation in Scotland, there would be many to add to the boarding-out list. The 450 patients who are now in almshouses having less than sixteen insane inmates could nearly all be provided for in this manner, as could two-thirds (and probably more) of those resident in almshouses of greater capacity, making, with those now boarded in various places by overseers of the poor, a total of nearly 675, which, if added to those in private families under the care of the Board of Lunacy and Charity, would swell the list to nearly or quite 850, a showing which by no means suffers when all the conditions are kept in mind. Were the feeble-minded included, as they are in Scotland, the aggregate would be considerably larger.

As the system of treating lunatics in Scotland has certain prominent features considered of great value, I believe so far as circumstances will permit, advancement in this country should be along the lines found advantageous there. No lunatic should be kept in a local almshouse who can be provided for in a private family, and the indigent insane should be wards of the State, supported at the expense of the Commonwealth. With such arrangements the boarding-out system could be very much extended, and the lot of the pauper insane greatly improved. Family care of the insane has a fixed place in Scotland; and it should be made a positive factor in the lunacy administration of every State having, like Massachusetts, a rural population capable of furnishing a sufficient number of suitable guardians.

In any event, the administration of the system should be in the hands of a staff of experienced physicians, who, under the supervision of the Central Board, should devote their whole time to the work.

Very respectfully,

A. R. MOULTON, M.D.

The British Medical Journal expresses discontent with the assurances that the practice of spraying arsenic on American fruit-trees to kill insect life is harmless to the fruit, and demands a further official inquiry on the subject.

METEOROLOGICAL RECORD.

For the week ending April 9, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-meter	Thermometer.	Relative humidity.	Direction of wind.	Velocity of wind.	Weath'r.	Rainfall in inches.
	Daily mean.	Daily mean.	Minimum.	6 A. M.	6 P. M.	6 A. M.	
S. 3	29.96	62	77	73	83	S.W. S.E.	13
M. 4	30.00	59	68	52	57	N.W. N.E.	11
W. 5	29.95	56	62	42	50	W. W.	12
T. 6	29.88	52	66	45	47	W. W.	16
F. 7	29.86	52	66	45	49	S. S.	3
S. 8	29.84	47	54	40	66	S. W.	15
<hr/>							
S. 9	29.83	50	66	45	57	W. W.	11
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* Cloudy; C. clear; F. fair; G. fog; H. hazy; S. smoky; R. rain; T. threatening; N. snow. + Indicates trace of rainfall. — Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 9, 1862.

Cities.	Estimated population for 1860.	Reported deaths in each.	Deaths under five years of age.	Infectious diseases.	Percentage of deaths from			
					Acute lung diseases.	Scarlet fever.	Diarrhoeal diseases.	Plumbago and croup.
New York . . .	1,515,361	968	399	16.61	23.10	3.96	1.65	4.84
Chicago	1,069,850	—	—	—	—	—	—	—
Philadelphia . . .	1,048,520	1,000	416	16.5	22.80	1.92	.72	6.26
Brooklyn	320,000	196	82	12.26	10.26	1.08	4.86	2.16
St. Louis	451,710	193	57	10.26	14.28	—	—	—
Boston	484,417	231	75	9.08	22.79	3.01	—	4.30
Baltimore	434,436	—	—	—	—	—	—	—
Cleveland	296,000	96	49	8.22	10.66	—	—	6.56
New Orleans . . .	242,938	—	—	—	—	—	—	—
Pittsburg	240,000	98	49	7.14	14.28	2.04	2.04	3.06
Milwaukee	240,000	80	31	29.75	16.25	1.25	3.75	16.75
Washington . . .	230,362	75	34	4.67	12.60	3.15	3.15	3.09
Albany	174,000	32	10	15.62	21.31	—	6.26	—
Charleston	65,163	26	7	—	—	—	—	—
Portland	36,425	12	0	—	15.38	—	—	—
Worcester	84,825	36	12	21.78	21.78	5.26	—	34.82
Lowell	77,696	15	5	11.33	—	—	—	—
Bridgeport	74,000	32	13	6.25	18.75	—	—	3.13
Cambridge	70,626	37	10	2.70	18.90	—	—	2.70
Lynn	55,727	17	3	5.88	29.40	—	—	5.88
Lawrence	44,824	—	—	—	—	—	—	—
Springfield	44,173	—	—	—	—	—	—	—
Bedford	40,800	—	—	—	—	—	—	—
Salem	30,861	17	2	—	5.88	—	—	—
Chelsea	27,369	—	—	—	—	—	—	—
Haverhill	27,412	8	4	25.00	25.00	12.50	—	—
Faunton	25,845	18	5	20.00	16.00	—	—	10.00
Gloster	21,853	7	2	—	42.84	—	—	—
Watertown	24,370	5	1	40.00	—	—	20.00	20.00
Malden	23,061	8	4	—	—	—	—	—
Fitchburg	22,037	9	4	44.44	22.22	11.11	11.11	—
Waltham	18,707	5	2	20.00	20.00	—	—	—
Pittsfield	17,711	6	2	40.00	—	—	—	—
Marlboro	16,723	6	1	—	—	—	—	—
Northampton . . .	14,960	5	2	—	20.00	—	—	20.00
Newburyport . . .	13,947	7	2	—	—	—	—	—
Medford	11,079	—	—	—	—	—	—	—
Hyde Park	10,192	5	1	—	—	—	—	—
Peabody	10,354	5	2	40.00	—	—	40.00	—

Deaths reported 2,646; under five years of age 1,000; principal infectious diseases (small-pox, measles, diphtheria and erysipelas, diphtheritis, whooping-cough, erysipelas and fevers) 338; diphtheria and croup 121; scarlet fever 62; diarrhoeal diseases 45; measles 35; typhoid fever 20; cerebro-spinal meningitis 15; whooping-cough 15; erysipelas 10; typhus fever 2; malarial fever 1.

From typhoid fever New York 5, St. Louis 4, Lowell 3, Brooklyn, Milwaukee and Nashville 2 each, Boston and Haverhill 1 each. From cerebro-spinal meningitis New York 7, Brooklyn 5, Milwaukee, Washington and Fitchburg 1 each. From whooping-cough Boston 7, Cincinnati and Washington 2 each, Brooklyn, Boston, Milwaukee and Fall River 1 each. From erysipelas New York 3, Boston and Cleveland 2 each, Brooklyn, Washington and Lowell 1 each. From typhus fever New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending March 26th, the death-rate was 22.3. Deaths reported 4,348: acute diseases of the respiratory organs (London) 466; whooping-cough 102; measles 120; diphtheria 48; diarrhoea 32; scarlet fever 27; fever 10.

The death-rates ranged from 9.9 in Brighton to 37.2 in Huddersfield; Birmingham 22.4; Blackburn 18.8; Cardiff 24.5; Gateshead 19.4; Hull 16.3; Leeds 22.6; Leicester 20.6; Liverpool 26.8; London 21.3; Manchester 29.2; Newcastle-on-Tyne 17.9; Nottingham 23.0; Portsmouth 17.8; Sheffield 22.8; West Ham 19.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 9, 1892, TO APRIL 15, 1892.

FIRST-LIEUT. JAMES D. GLENAN, assistant surgeon, is relieved from duty at Camp Oklahoma, and ordered to Fort Sill, Oklahoma Territory, for duty at that station, relieving **CAPTAIN FRANCIS J. IVES**, assistant surgeon, who, on being so relieved, will report in person to the commanding officer at Fort Sheridan, Illinois, for duty at that post. S. O. 86, A. G. O. April 12, 1892.

Leave of absence for three months on surgeon's certificate of disability is granted **CAPTAIN ALONZO E. CHAPIN**, assistant surgeon, U. S. A.

Leave of absence for two months, to take effect on or about May 1, 1892, with permission to apply for an extension of one month, is granted **CAPTAIN WILLIAM C. GOBROS**, assistant surgeon, U. S. A.

CAPTAIN WILLIAM H. ARTHUR, assistant surgeon, is relieved from duty at Fort Grant, Ariz., and ordered to Vancouver Barracks, Washington, for duty as post surgeon at that station, relieving **CAPTAIN LOUIS BRECHERIN**, assistant surgeon. Captain Brecherin, upon being relieved by Captain Arthur, will return to his proper station, Presidio of San Francisco, Cal.

The resignation of **FIRST-LIEUT. WILLIAM N. SUTTER**, assistant surgeon, U. S. A., has been accepted by the President, to take effect July 28, 1892.

FIRST-LIEUT. MERRIT W. IRELAND, assistant surgeon, U. S. A., ordered to Fort Yates, N. D., for temporary duty during the absence of **CAPTAIN ALONZO E. CHAPIN**, assistant surgeon, U. S. A., on sick leave.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 16, 1892.

W. S. DIXON, surgeon, ordered to the Smithsonian Institution.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, April 25, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. M. H. Richardson: "A Case of Intestinal Obstruction, Laparotomy, Separation of Adhesions and Recovery."

Dr. G. L. Walton and Dr. F. E. Cheney: "The Importance of Correcting Ocular Defects in Functional Nervous Troubles."

G. G. SEARS, M.D., Secretary.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The annual meeting will be held at 19 Boylston Place, on Saturday, April 30, 1892, at 8 P. M.

Dr. G. W. Gay: "A Case of Nephrolithotomy; removal of a stone weighing five ounces; Recovery."

Dr. T. M. Rotch: "Improved Methods of Modifying Milk for Infant Feeding."

Dr. J. H. McCollum will show (by lantern slides) the various stages of the eruption of small-pox.

Dr. C. B. Belt, will read a circular of information in regard to the Pan-American Medical Congress: Dr. A. P. Clarke, of Cambridge, and Dr. Marcy will make remarks about it.

Electron of officers.

Supper after the meeting.

Members are requested to notify the Secretary at 188 Marlborough Street, of any error or change in address.

EDWARD N. WHITTIER, M.D., President.

JAMES J. MINOR, M.D., Secretary.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION will hold its Eighteenth Annual Session at Cincinnati, Wednesday, Thursday and Friday, October 12, 13 and 14, 1892.

CHARLES A. L. REED, President, Cincinnati.
E. S. McKEE, M.D., Secretary, Cincinnati.

APPOINTMENT.

At a meeting of the Trustees of the Free Hospital for Women, held April 12th, it was voted to establish, in addition to the morning and afternoon out-patient clinics already existing, an evening out-patient clinic, to be held at 7 o'clock Mondays and Fridays. DR. CHARLES H. HARE was appointed Surgeon to Out-Patients in charge of this clinic.

RECENT DEATHS.

ORAMEL MARTIN, M.D. M.M.S.S., died in Worcester, April 15th, aged eighty-one years. During the war he served as surgeon of the third battalion of riders. He has been surgeon at the Worcester City Hospital, and was an honorary member of the Vermont Medical Society.

ELIJAH WHITNEY, M.D., died in New York, April 5th, aged ninety-three years. He was probably the oldest physician in the city. In early life he was a Presbyterian minister, but later graduated in medicine, and practised in New York from 1849, until a few years ago.

BOOKS AND PAMPHLETS RECEIVED.

The Year-Book of Treatment for 1892. Philadelphia: Lea Brothers & Co. 1892.

Aphasia and other Affections of Speech. By Charles K. Mills, M.D. Reprint. 1891.

Transactions of the American Association of Obstetricians and Gynecologists. Vol. iv. 1891.

Transactions of the American Surgical Association. Vol. ix. Edited by J. Ewing Mears, M.D. 1891.

The Pathology of Hip-joint Disease, with Illustrative Cases. By H. Augustus Wilson, M.D. Philadelphia.

Transactions of the New York State Medical Association, for the year 1891. Vol. viii. Edited by E. D. Ferguson, M.D.

A Text-book of Nursing. Compiled by Clara S. Weeks Shaw. Second edition. New York: D. Appleton & Co. 1892.

Transactions of the American Otological Society. Twenty-fourth Annual Meeting. Washington, D. C., September 22, 1891.

Tobacco, Insanity and Nervousness. By Dr. L. Bremer, late physician to the St. Vincent's Institution for the Insane, of St. Louis, Mo. 1892.

The Medical Annual and Practitioners' Index. A work of reference for medical practitioners. Tenth year. Bristol: John Wright & Co. 1892.

Concerning American Indian Womanhood: An Ethnological Study. By Wm. Thornton Parker, M.D. (Mass.). Beverly, Mass. Reprint. 1892.

Multiple Neuritis and Some of its Complications. Clinical Lecture delivered at the Philadelphia Hospital. By Charles K. Mills, M.D. Reprint. 1892.

The Treatment of Sciatic Neuritis by the Local Abstraction of Blood. By F. Gundrum, M.D. Escondido, Cal. Detroit, Mich.: George S. Davis. Reprint. 1892.

Practical Midwifery, a Hand-book of Treatment. By Edward Reynolds, M.D., Assistant in Obstetrics in Harvard University. New York: William Wood & Co. 1892.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Semi-annual Session, November, 1890, and Ninety-third Annual Session, April, 1891.

Aphasia Due to Sub-dural Hemorrhage without External Signs of Injury; Operation; Recovery. By L. Bremer, M.D., and N. B. Carson, M.D., of St. Louis. Print. 1892.

A Treatise on Bright's Disease of the Kidneys: Its Pathology, Diagnosis and Treatment. By Henry J. Millard, M.A., M.D. Illustrated. Third edition. New York: William Wood & Co. 1892.

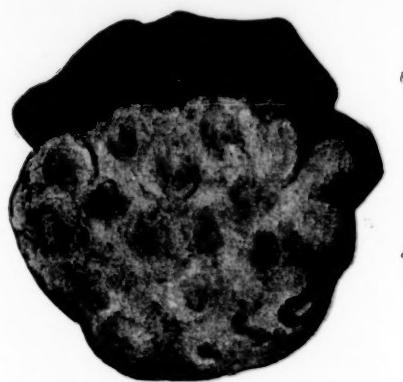
Some Points in the Diagnosis and Nature of Certain Functional and Organic Nervous Diseases. Subacute Recurrent Multiple Neuritis. By J. T. Eskridge, M.D., Denver, Col. Reprints. 1892.

A Treatise on Diseases of the Nose and its Accessory Cavities. By Greville MacDonald, M.D. (Lond.), Physician to the Hospital for Diseases of the Throat. Second edition. London: MacMillan & Co. 1892.

The Treatment of Epilepsy; with Special reference to the use of Potassium Bromate, Magnesium Bromide, Nitro-glycerine, Antifebrin, Sulphonil, etc. By Guy Hinsdale, M.D., Philadelphia. Reprint. 1892.

Bacteriological Diagnosis, Tabular Aids for Use in Practical Work. By James Eisenberg, Ph.D., Vienna. Translated and augmented by Norval H. Pierce, M.D. Philadelphia and London: The F. A. Davis Co. 1892.

Fig. 1.

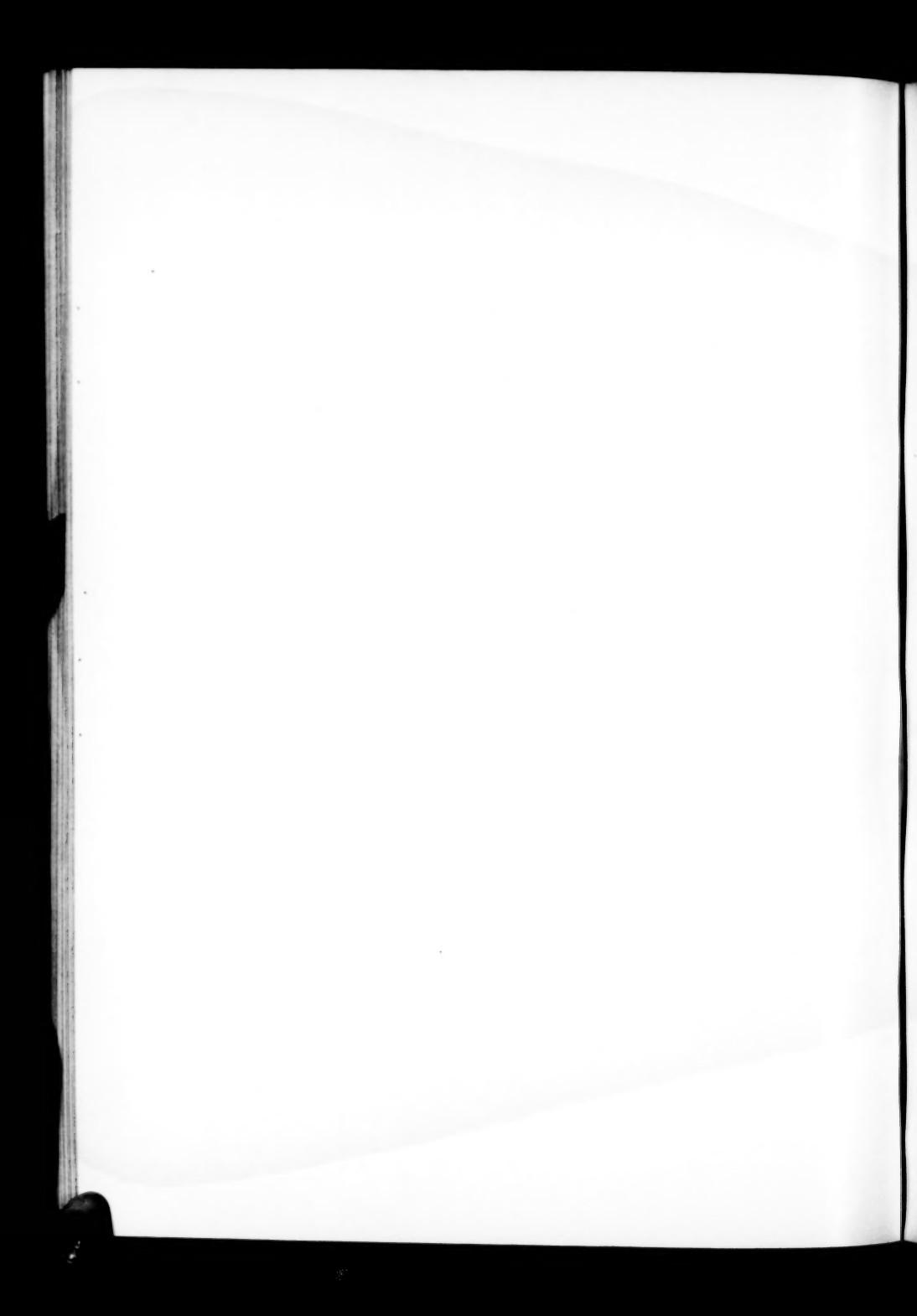


Dr. W. W. Keen's case of Resection of the Liver for Cystic Adenoma of the
Bile Ducts. *a*, Tumor. *b*, Liver Substance. Natural size.

Fig. 2.



Section of the same tumor, showing its cystic character.



Original Articles.

ON RESECTION OF THE LIVER, ESPECIALLY FOR HEPATIC TUMORS.

WITH THE REPORT OF A SUCCESSFUL CASE OF RESECTION FOR AN ADENOMA OF THE BILE-DUCTS, AND A TABLE OF TWENTY RECORDED CASES OF HEPATIC OPERATIONS.¹

BY W. W. KEEN, M.D.,
Professor of the Principles of Surgery and of Clinical Surgery,
Jefferson Medical College, Philadelphia.

MRS. J. G., was sent to me by Dr. B. S. Erwin, of Mauch Chunk, October 2, 1891. Age thirty-one; married at fifteen; six living children; four miscarriages, the last one about the middle of August, 1891; weight January, 1891, 135 pounds; August, 1891, 125 pounds. She has been subject to malaria for six years, escaping it, however, in the past year. Otherwise her general health was good until three years ago, when she began to have pain, weakness, flushing, painful and irregular menstruation, and soon passed into a generally broken-down condition. She has had neither diarrhoea nor dysentery.

About two years ago she first noticed a lump on the right side of the abdomen. This remained for several weeks, and then was lost sight of. It reappeared a year ago, at first about the size of a walnut, but growing slowly. Her pregnancy, which ended in a miscarriage in August, 1891, seemed to cause a rapid increase in its size. There has been at times retention of urine, and of late the quantity has been very small. She has never had any jaundice or especial digestive troubles. Pain and excessive discomfort have caused her to seek relief; she is broken down in general health and utterly wretched.

On examination, an oval tumor, about the size of a fist, was found on the right side of the abdomen, in the situation of the kidney, separated from the liver dulness by an area three fingers broad, of distinct tympanitic resonance. By bi-manual examination pressure posteriorly is felt in front, and vice versa. The tumor was quite movable, moderately tender and of about the consistency of the kidney; no especially soft portion was found. The renal artery could not be detected. Vaginal examination showed no connection of the tumor with either uterus or ovaries. The perineum was somewhat torn posteriorly; the mouth of the uterus showed a moderate tear; and there was rather profuse leucorrhœa.

A microscopical examination of the urine was made by Dr. Kyle, who reports as follows: "Specific gravity 1,010; leucocytes single and in casts; blood-casts (many); blood-cupopuses; epithelium, squamous and ciliated; a few small renal epithelial cells; numerous crystals of uric acid, urate of ammonia, etc.; urea, 1.6%. Diagnosis probably a floating and diseased kidney. An exploratory operation was recommended.

Operation, October 9, 1891, assisted by Drs. Wm. J. Taylor and J. Chalmers DaCosta. Chloroform was used instead of ether, in view of the condition of the kidneys, as shown by the urine. I operated by a vertical incision in the right linea semilunaris, reaching nearly to the border of the ribs and nearly to the ilium. The incision was four and a half inches long. The moment the peritoneal cavity was reached a multi-

ple cystic tumor was seen. The surface was reticulated by partitions between the cysts, the cysts being on an average about the size of the little finger-nail, some larger and some smaller. The color was a light bluish-white (see Plate). The moment the hand was introduced into the abdomen it was discovered that the tumor had no connection with the kidney. The right kidney appeared to be somewhat smaller than normal but was in its right place. On drawing the tumor out of the abdomen, it was instantly seen to be connected with the liver, involving its extreme right border. In size it was three and a half inches vertically and nearly the same transversely. At its base, where it joined the liver substance, it was two and a half inches thick. It was evidently a localized tumor. Just at its internal border was the gall-bladder, which was normal, but so close to the tumor that I dissected it loose for half an inch in order to operate with greater ease. A few small vessels required ligation at this point.

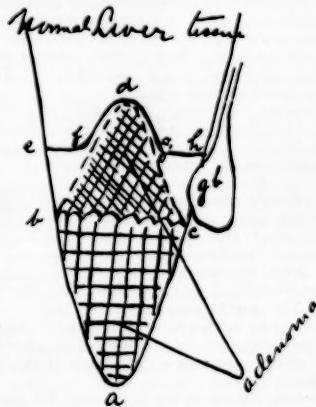


FIG. 1.

Diagrammatic Section of the Liver and the Adenoma. *a b c*, the limits of the tumor as seen externally; *e b c*, its wedge-like prolongation into the liver; *d e*, lines of section of liver substance by the cautery; *f g*, the portion enucleated by the finger-nail; *g b*, the gall-bladder; *d f c* and *d g h*, the "flaps" left after removal of the neoplasm.

Having gone so far as to open the abdomen and having found the source of the trouble, and the tumor appearing to me to be possibly, and I might even say probably, non-malignant, I determined to attempt its removal. My first idea was to ligate the thick border of attachment, where liver and tumor were continuous, and then to divide this pedicle, if it could properly be called a pedicle, by the Paquelin cautery. I therefore put one stitch directly through the liver-substance next the gall-bladder, induced especially to begin here by reason of a very large artery which had been exposed but not wounded during the separation of the gall-bladder from the liver. Having tied the liver here, I tried the effect of the Paquelin cautery, and was so well satisfied with it that I made no further attempt to ligate the liver-substance but continued cutting with the cautery. As I cut, four very large veins were laid bare, and were ligated before being burned through. When I had cut about half way through in depth, I

¹ Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

found that my cautery knife was cutting into cysts of the neoplasm, and that the latter extended as a wedge into the liver to a greater distance internally than was apparent from the outside (Fig. 1). Accordingly I made an attempt to strip the liver-substance from the tumor with my thumb nail, and found that I could do so with perfect ease and without serious hemorrhage. This enucleation left the tumor attached to the liver at its posterior border only. I then burned through the posterior attachments of the tumor with the cautery. A few points required extra touching with the dull red platinum point. The liver-stump, roughly speaking, resembled that of an amputation with its two flaps. These two edges or flaps were then approximated by five sutures passed deeply through the substance of the liver.

The intestines had been protected meanwhile by a large flat sponge. This had kept the most of the blood out of the belly cavity, and the amount lost I estimated at six to eight ounces. The belly cavity was flushed with hot water, and the wound closed after inserting a glass drainage-tube. A sublimated wood-wool dressing was now applied, and the patient put back in bed in very fair condition. Within fifteen minutes her lips had assumed a good, though pale, red color. The operation lasted about an hour.

December 10, 1891. After the operation, two doses of one-eighth of a grain of morphia hypodermically relieved her pain, and one of one-fourth of a grain of cocaine by the stomach checked her vomiting. From the drainage-tube in the first twenty-four hours about three ounces of bloody serum were removed, in the second twenty-four hours less than one ounce; and therefore at the end of forty-eight hours, the tube was removed. No bile or bile-stained fluid was seen at any time. The bowels were moved on the second day by drachm doses of sulphate of magnesia, the stools being then and afterward of a normal brown color, without any visible disturbance of the hepatic function.

The temperature on the night after the operation rose to 101.2°, on the two following days to 100°, and after that was not above 99°, excepting during what was apparently a malarial attack, which began eleven days after the operation and lasted four days. During this attack the temperature rose to 101.2° again. The stitches were removed at the end of a week. In fact, with the exception of the malarial attack, her recovery was an uninterrupted one. I kept her in bed for about three weeks in order to avoid any possibility of ventral hernia, and also, as I had no experience in such operations on the liver, I feared that either from the charred surfaces or from want of union of the tissues, followed by escape of bile into the peritoneal cavity, there might be some digestive or other abdominal difficulty. No such trouble, however, appeared, and she went home forty-two days after the operation, entirely well. I heard from her in February, 1892, and she has continued in the best of health, with no disturbances of either liver, stomach or bowels.

The tumor was entirely strange to me, and unlike anything I had ever seen before. Naturally my first idea was that it might be made up of echinococcus cysts, but certainly unlike any I had ever met with. I therefore gave it to Dr. W. M. L. Coplin, Adjunct Professor of Hygiene in the Jefferson Medical College, who

was assisted by Dr. D. Bevan in its examination. Upon receiving their report, I found that the tumor was exceedingly rare, and interesting pathologically as well as surgically. Accordingly I sent it to Prof. W. T. Councilman of the Johns Hopkins Hospital, who also has kindly sent me the results of his examination. I append both reports, as the examinations were made entirely independently of each other, and their concurrences are therefore the more valuable.

Professor Coplin has also, at my request, prepared a few remarks on the pathology of hepatic cysts of new formation, excluding hydatid cysts.

PATHOLOGICAL REPORT OF PROF. COPLIN AND DR. BEVAN.

"The tumor is ovoidal in outline, and measures 9 cm. (3½ in.) in width, 11.5 cm. (4½ in.) in length, 4.5 cm. (1¼ in.) in thickness. Weight, 113 grm. (3 oz., 255 gr.). Surface smooth, with slight tuberous elevations corresponding to cysts located beneath. The surface of removal irregular, showing at points attachment of liver-tissue. Several very large veins are to be seen entering at various points. Upon the external surface an incision has been made disclosing numerous cysts varying in diameter from 1 mm. or less to 20 mm., and containing a milky, flocculent fluid about the consistency of blood-serum. Under the microscope this contained white blood-corpuscles, and a few red, these probably having gained ingress in the opening of



FIG. 2.
Cells from the Cystic Fluid. The figure on the extreme right represents the size of red blood corpuscle.

the tumor. There was also present a much larger cell, at least three times the size of a white blood-corpuscle, irregular in outline for the most part, although a few could be seen with a sharply defined wall and round in outline (Fig. 2). Many of these bodies contained well defined nuclei, although these were by no means constantly present. When nuclei were present, the peri-nuclear protoplasm was always granular; those having no nuclei were finely granular, at points containing vacuoles. On the warm stage of the microscope these cells did not evince any movement; however, their varying contour is highly suggestive, and a more positive result might have been attained had the test been made early after removal.

"Many of the cysts communicate by small round openings through the thin part of the wall; these communications are not, however, universal, as the entire contents cannot be evacuated by the single incision, and fluid thrown in one cyst will not distend more than three or four other cysts. The walls of the cysts vary greatly, at points being extremely thin; elsewhere they may be found fully 6 mm. to 10 mm. in thickness. The density of the tissue between the cysts also varies, being for the most part firm and elastic.

"Microscopic examination reveals a cylindrical cell epithelial lining, at points projecting into the cyst cavity, and closely resembling dendritic growths, as seen in certain forms of papilloma (Fig. 3). It is, however, to be remembered that sections of gland acini would give exactly this appearance. The cylindrical cells are

high and not ciliated. They are arranged upon a fairly well defined basement membrane, back of which is found a varying thickness of connective tissue containing blood-vessels, unstriped muscular tissue and fibrous tissue, in varying amounts and stages of growth, at points still made up of embryonic cells. The sections do not show any hepatic cells present in the tumor itself.



FIG. 3.

a, Large cyst lined with columnar epithelium; b, small cysts; c, blood-vessel with greatly thickened walls; d, liver cells with dilated vessels between them.

Bacteriological Examination.—Sections stained by Gram's method, tissue stained by picro-carmine, show cocci present in large numbers. These are arranged for the most part in zoogaea around the blood-vessels and lymph-spaces; as single cocci and in short chains, they are also to be found between the epithelial cells and their basement membrane. The surface of the tumor being seared with cautery and a small cyst opened by a sterile needle, culture-tubes were inoculated. These gave a pure culture of cocci, growing rapidly on agar, as an ashen gray opaque growth, slightly elevated on the surface and penetrating the medium as a dense cloud and not liquefying the surface. They stained well both by Gram's method and Loeffler's alkaline stain. They measure 1 μ . in diameter, that is, they are slightly larger than the staphylococcus albus."

The patient had had neither attacks of dysentery nor of diarrhea from which any infection by these micro-organisms could be accounted for.

REPORT OF PROF. W. T. COUNCILMAN.

"The tumor is oval and somewhat flattened. The surface is smooth, but uneven from numerous rounded projections. The surface of removal is irregular, the edges here and there showing the marks of the cautery. This surface consists of liver-tissue with considerable connective-tissue. Several large vessels enter the tumor at this point.

"On section of the tumor, it consists of numerous cysts of varying size and of irregular shape. Many of these open into one another, and from the surface of one cyst there are deep projections into the sur-

rounding tissue. The cysts vary in size from 1 mm. (or smaller) to 3½ cm. They are relatively more frequent and larger in the periphery of the tumor. They contain (after hardening in alcohol) a soft, white, curdy mass. The wall is smooth and tolerably thick. The centre of the tumor and the tissue everywhere separating the cysts is dense and fibrous.

"On microscopic examination the cysts are lined with high, cylindrical epithelium, which in many places projects in small papillomatous formations within the cyst. None of the epithelial cells are ciliated. The tissue between the cysts, and forming the stroma of the tumor, is dense connective-tissue with numerous bands of non-striated muscular fibres. In the stroma there are some places rich in granulation cells.

"The tumor is one of the rare cystic tumors of the liver, and evidently originates from the bile-ducts, and most probably from the large vasa aberrantia found on the edge of the liver. The irregular shape of the cysts is due to their rupture into one another."

Professor Coplin has kindly furnished the following:

REMARKS ON ADENOMATA.

"Of the cystic adenomata of the liver we know very little, and the confusion is deepened by the fact that the German writers Ziegler, Klebs and others, consider cylindrical-celled carcinoma as adenoma, and draw little or no line of differentiation except that of infiltration. The earliest attainable literature is in Klebs who quotes E. Wagner² as having observed in the liver enlargements, the structure of which resembled the so-called glandular tumors of the mammary gland; Klebs is inclined to think that all adenomata of the liver are malignant, and does not refer to any that at all resemble the present case. Ziegler states that adenoma of the liver may be made up of tubular glands instead of lobules.³ Although he lays no stress on these tumors, save in their rarity, he gives a most typical cut presenting the exact histological structure of the present case, and designates the growth as papilliferous cystadenoma. As to the exact origin of these growths, nothing is known. Whether they arise from the ducts or from the liver-cells within the lobules, as Rindfleisch thinks, cannot be demonstrated. The reported cases do not appear at all like the present one; they are solitary cysts disseminated throughout the organ, lined for the most part by pavement epithelium, rarely by cylindrical cells, more rarely by ciliated cells.⁴ In the latter case, one can hardly call it an adenoma, or even a cyst."

Dr. David Bevan has kindly made an excellent drawing from a section (Fig. 3) and has furnished me with the following description of the microscopic appearance of the tumor:

"The stroma is composed of white fibrous connective-tissue, in which small openings are perceived, presumably (?) beginning cysts. Occupying the centre and extending to the right lower part of field, is observed a large cyst (a) lined with columnar epithelium. The margin of the cyst is very irregular, a number of small papillæ extending into it. In its extreme lower end is noted a papilla of considerable size; above the large cyst are two smaller ones (b), to the right of which is an artery with greatly thickened wall. Still further to the right is a bundle of unstriped muscular

² Arch. d. Heilk., 1861, S. 471.

³ Path. Anat. und Pathogenesis, Art. 167.

⁴ Friedreich: Virchow's Archiv.

tissue and a blood-vessel. To the left of the central cyst is another bundle of unstriped muscle. Just beyond this is the limit of the neoplasm where the fibrous tissue is very dense, sharply defining it from the liver proper (*d*). In the lower left of the field (*c*) is a large artery with enormously thickened coats. The lumen is greatly altered in form. The liver-cells (*d*) are changed in shape, and the capillaries between them much enlarged."

Dr. Thompson S. Westcott has kindly prepared the accompanying table, which, I believe, contains all the cases of resection or amputation of the liver which have been recorded up to this time. Based upon this and upon my personal experience in my own case, I shall add a few

REMARKS.

(1) *Date and locality of operation.*—Of the 20 cases two are American, and the others European, chiefly German and Italian. I have not found any English case. The first American case was reported by Tiffany, of Baltimore, in 1890 (No. 15). The first recorded case was by Langenbuch, in 1888, less than four years ago.

(2) *Age.*—This varied from twenty-one to fifty-eight years. The decade from twenty-one to thirty furnished six cases; that from thirty-one to forty, five cases; that from forty-one to fifty, three cases; and two were between fifty-one and sixty.

(3) *Sex.*—In striking contrast to age, sex is evidently a potential factor. Of the 19 cases in which this is given, three were men and 16 women. Taken in connection with the well recognized greater frequency of gall-stones in women, one can scarcely avoid attributing both affections to the pressure upon the liver, resulting from tight-lacing. In fact, Langenbuch's case (No. 1) was not really one of a tumor of new formation, but was a portion of the liver itself in process of gradual separation from the main organ, presumably by the pressure of the clothing; and Laueenstein's (No. 11) probably a similar one.

(4) *Size and weight.*—The tumors and portions of liver removed have varied in size from that of a small nut up to the "size of three fists," or of "a man's head." In weight, they have been as large as $3\frac{1}{2}$ oz., as in the present case, to $11\frac{1}{2}$ oz., and even 3 lbs.

(5) *Diagnosis.*—Of the twenty cases nearly all were incorrectly diagnosed. In three it was thought that there was a tumor connected with the liver, and in one with the gall-bladder. In others, the diagnosis had been a tumor of the pancreas, the mesentery, the omentum, the pylorus, the colon, the ovary, or the kidney. In my own case my diagnosis was a floating and probably diseased kidney. The reciprocal pressure, so easily felt in the loin and anteriorly, the mobility of the tumor, its apparent resemblance to the kidney in size, the blood-casts, leucocytes and renal epithelium in the urine, combined especially with the fact that there were over two inches of distinct tympany between the tumor and the border of the liver, all looked towards the kidney and away from the liver as the organ involved. I find that a similar tympany is distinctly stated to have intervened between the tumor and the liver in six cases of the twenty, and probably existed in some of the others.

While this physical sign should have its due weight, the presence of tympany must not be deemed to exclude tumor of the liver.

The symptoms, also, are not usually at all characteristic of the hepatic origin of the tumor. There has been no jaundice and no digestive symptoms other than those which would naturally arise from almost any abdominal tumor.

(6) *Variety of tumor.*—In two cases the part resected was a constricted and partly separated portion of the liver, and was not therefore, properly speaking, a tumor. Of the remaining eighteen, one-half (nine) were echinococcus and hydatid cysts; three were cases of cancer; three of syphilitic tumor; and one each of sarcoma, small calculi and adenoma of the bile-ducts.

But the chief interest naturally centres in the fact, the methods and the results of removal, since this constitutes an entirely new chapter in abdominal surgery.

(7) *Can any large portion of the liver be removed without a fatal result?*—The results of experiments upon animals rendered it probable, not only that in man also a portion of the liver could be removed without so seriously interfering with its function as to be incompatible with life, but that a very considerable portion could thus be removed without unreasonable danger. Ponfick⁵ showed that in the rabbit the removal of a quarter of the liver caused a slight deterioration in the general condition of the animal; removal of one-half was followed by much more serious results, which, however, passed off within a few days: even removal of three-quarters of the liver could be recovered from, though the prostration was very severe at first; but that removal of more than this amount (three-quarters) was always fatal. He showed, also, that not only could the animal bear the loss of a large part of the liver, but that there was a reparative power in that organ by which new hepatic tissue could be produced.

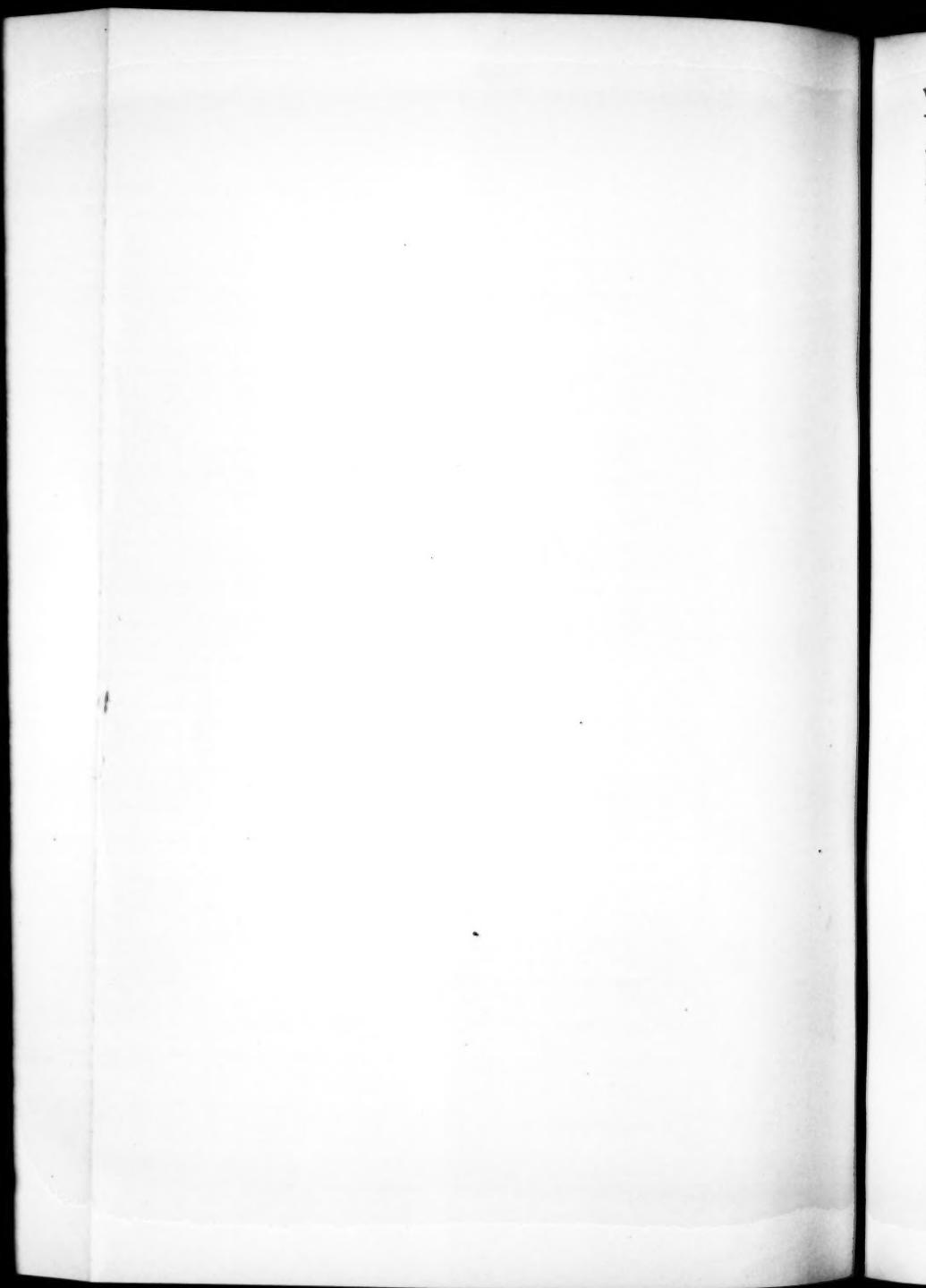
Later,⁶ Von Meister, from his own experimental observations has confirmed some of the results previously obtained by Ponfick, of the remarkable degree of reparative power exhibited by the liver, a power which may exist in other glands in greater or less degree, and he has even gone further. He found that in the dog and cat, as well as in the rabbit, the removal of even more than three-fourths of the liver was not followed by any serious consequences, and that within the space of thirty-six days repair had advanced to such an extent that the weight of the organ was regained. This regeneration is effected partly by hypertrophy of the hepatic cells, but mainly by their hyperplasia; but new lobules are not formed, and biliary ducts as well as blood-vessels share in the new formation. Observations were also made upon the effect of extirpation of such large portions of the liver upon the excretion of urea. It was found that the total quantity of nitrogen notably diminishes, but not in proportion to the nitrogen of the urea, so that the proportion of the latter to the whole nitrogenous excretion is decreased. On the other hand, the amount of extractive matters is increased, and their nitrogenous constituents appear in greater proportion than normal to the total nitrogen. The diminution in urea is proportional to the amount of liver substance removed, total extirpation of the organ leading to a very marked decrease in urea. It was further found that after partial extirpation — within a period of from eleven to fifteen days — the quantity of urea rises until it once more attains the normal degree.

⁵ Lancet, 1891, ii, p. 1409.

⁶ Lancet, 1890, i, 681; and Beilage z. Centralbl. f. Chir., 1890, 67.

TABLE OF TWENTY REPORTED CASES OF REMOVAL OF TUMORS OF THE LIVER.
COMPILED BY THOMPSON S. WESTCOTT, M.D., OF PHILADELPHIA.

No.	Reporter and Reference.	Sex.	Age.	Duration, Nature and Size.	Method of Removal.	Treatment of Liver Stump.	Result.	Remarks.
1	Langenbuch. Berlin klin. Woch., 1886, No. 3, p. 37.	F.	30	Eight years. A constricted part of left lobe supposedly due to carcinoma, until tumor began to be palpable and was first observed; weight, 370 grammes.	Ligamentous connection divided into several portions and ligated.	Returned to abdomen.	Recovery.	Abdomen reopened for internal hemorrhage a few hours after operation. Liver resected and stump returned. Exploration of abdomen revealed no signs of pancreatic tumor, movable tumor of mesentery or echinocoeum of liver. Possibility of a tumor of liver developed by hæmorrhage.
2	Loreta. Memorie della R. Accademia delle Scienze dell' Istituto di Bologna, 1886-1888, serie quarta, tomo viii, p. 581.	M.	40	Two years. Appeared externally the size of a fetal head. Echinocoeum cyst. Underlying tissue of left lobe infiltrated for an extent of 15 by 14 centimeters.	This area was included between an interlacing continuous suture, drawn tightly and tied. Removal by biopsy.	Hæmorrhage checked and edges of Gillson's capsule at edges of wound on convex and concave surfaces stitched together and to abdominal wall. Colloidion and iodiform dressing.	Recovery.	Diagnosis: Suspected echinocoeum.
3	Garré. Beiträge zur klin. Chir., 1888, Bd. iv, p. 181; abstr. in Annals of Surgery, xi, 1890, p. 127.	F.	44	Echinocoeum cyst, with pedicle.	Pedicle tied and touched with thermo-cautery.	Disinfected and returned to abdomen. No drain.	Recovery.	Tympanitis between liver and tumor; not believed to be connected with liver, but probably mesenteric or omental.
4	The same.	M.	50	Six months. Hazle-nut-sized cancerous nodule of right lobe, metastatic, from a larger tumor of abdomen.	Excision by knife.	Seared with thermo-cautery and returned.	Recovery.	Main tumor not removed, its point of origin not being determined. Diagnosis before operation: Carcinoma of mesentery.
5	Pozzi. Gazette Méd. de Paris, June 20, 1888; also Cong. Franc. de Chir., Proc. Verb., 1888, p. 945.	F.	34	Large echinocoeum cyst.	Scissors.	Ligation, thermo-cautery and suture, with suture of liver wound in abdominal wound, and drainage.	Recovery.	Discharge of bile and removed liver tissue through the drain. Fistula closed.
6	Ruggi. Dell' Epatectomia Parziale nella cura delle cisti d'echinococo, Bologna, 1889.	F.	22	Two years. Double echinocoeum cyst, in oblique diameter above 19 cms., springing from anterior surface a portion of liver 18 by 10 cms., excised 3 pounds.	Excision. Vessels tied with catgut.	Edges of cavities sutured to peritoneal edge of abdominal wound, and treated externally.	Recovery.	Diagnosis of echinocoeum of kidney, as the tumor was found in upper portion with liver, being separated by a tympanitic area (intestinal loop). Free discharge of bile through wound.
7	Boggi. Wiener med. Presse, No. 21, 1889; abstr. in Ann. Jour. Med. Sciences, Sept., 1889.	F.	--	Double echinocoeum cyst, weight 3 pounds.	Enucleated. Portion of liver parenchyma 3 in long resected.	Edges of liver cavity sutured in abdominal wound.	Recovery.	Free discharge of bile through wound.
8	Fohr. Handbuch Chirurgie, 1890, 22: 610-612; in Annals of Surgery, 1890, xi, p. 28.	F.	21	Tumor 9 years, rapidly increasing after confinement 11 mos. before. Echinocoeum cyst, size of child's head, extending below a line from one iliac spine to the other, and above the umbilicus with liver.	Excised with a portion of greatly atrophied liver tissue.	Wound united by a continuous suture so as to form a crest-like elevation. Abdominal wound closed.	Recovery.	
9	Wagner. Beilage zur Centralbl. f. Chirurg., 1890, p. 68; also Revue de Chir., 1890, x, p. 767.	F.	43	Four years. Right lobe, probably syphilitic. Three fistulae, with pedicle.	Division after ligation.	3 x 10 to 12 cms. Returned to abdominal cavity.	Death, same day.	Gall-bladder could not be found.
10	Déses. Union Médicale du Nord-est, 1890, No. 3, p. 91.	F.	23	Seven or eight years. Hydatid cyst, size of a large orange, broad, arising from the sharp border of left lobe, and enveloped by two folds of the gastro-hepatic omentum.	Pedicle at first incised by cautery, but part of hemorrhage ligated by two turns of catgut and removed by scissors.	Lavage. Abdominal incision closed.	Recovery.	Diagnosis of cyst of ovary, as it appeared attached in region of right ovary. It lay in front of stomach and behind transverse colon. Seemed independent of liver, and no hydatid fistulae felt.
11	Lauenstein. Beilage zur Centralbl. f. Chirurg., 1890, p. 73.	F.	--	Large freely-movable lobule attached to lobus Spigelii.	Operation in two stages. Thermo-cautery.	Extra-peritoneal.	Death, 12th day.	Diagnosis of liver tumor.
12	Tillmanns. Beilage zur Centralbl. f. Chirurg., 1890, p. 73.	?.	--	Large syphilitis.	Excision by knife.	Attempted suture, but sutures torn out. Stump fixed in abdominal wound.	Recovery.	Diagnosis: Cancer of pylorus or colon. Tympanite between tumor and liver. Gall-bladder removed.
13	Hochberg. Wiener klin. Woch., 1890, No. 23, in Centralbl. f. Chirurg., 1890, p. 751.	F.	58	Nine mos. Under surface of liver, 12 cm. in diameter, infiltrated, 3.5 by 4.5 cms., Carcinosomatous.	Isthmus tied, liver fixed to abdominal wall, and tumor amputated.	Stitched in abdominal wound.	Recovery.	Diagnosis: Probable tumor of omentum, not of liver, as note between liver and tumor was tympanitic.
14	Skilforsky. Wratch. No. 27, 1890, p. 594; in Annals of Surgery, xiii, 1891, p. 151.	F.	24	Seven mos. Fibro-myoma lipomatodes sarcomatoides. Size of man's head, with isthmus 23 fingers' breadth.	Excised with curved scissors, and surface cauterized. Abdominal incision of 5 in. in line of fibres of left rectus abdominis.	Cavity size of a walnut left, walls of which were cauterized.	Recovery.	Diagnosis not made. Operation exploratory.
15	Tiffany. Maryland Med. Journal, 1890, No. 23, p. 531, and International Med. Mag., April, 1892.	M.	25	Six mos. Tumor noticed to lie in middle line and slightly in epigastric region; nodule on convex surface of liver; contained a small amount of fluid, and was adherent to liver.	Contour of tumor burned through with cautery, and tumor enucleated. Hemorrhage stopped by gauze and pressure.	Fixed to abdominal wall.	Recovery.	
16	Hochberg. Wiener klin. Woch., 1890, No. 52, 1890; in Centralbl. f. Chirurg., 1891, No. 18, p. 365.	F.	27	Gumma 9 cms. Tumor imbedded in capsule, and covered with normal liver substance.	Total extirpation. Excision of a portion of liver.	Wound closed with sixteen sutures, partly silk and partly catgut.	Recovery.	
17	Tansini. Brit. Med. Journal, 1891, i, 81.	F.	--	Hydatid cyst.	Pedicle sutured to abdominal opening, tumor protruding.	Surrounded with iodiform gauze and tied with rubber drainage tube progressively tightened.	Recovery.	Free hemorrhage from cut surface controlled by esign ligature. Operation followed by no rise of temperature.
18	Lücke. Centralbl. f. Chir., 1891, No. 6, p. 115.	F.	31	Two years. Cancer left lobe size of fist, pedicle 20 centimeters in circumference.	Affected portion, clearly demarcated from healthy tissue, surrounded by rubber tube.	The artificial pedicle measured 24 cms. in circumference. Mass fixed to tip of incision by sutures. Iodiform dressing. Strangulated part withered; resected on seventh day. Edge of liver wound united by five silk sutures. Stump returned to abdomen.	Recovery.	Thermo-cautery used at first; abandoned on account of bleeding. Pedicle divided with cautery on ninth day. Diagnosis of distended gall bladder made by several other surgeons.
19	Terrillon. Rapport de Duplay. Bulletin de l'Académie de Médecine de Paris, 1891, xxv, p. 75.	F.	53	Six years. Following supposed injury. Multiple hydatid cysts, involving a portion of the liver about the volume of two fists.	Thermo-cautery and enucleation.		Recovery.	Diagnosis of flitting and probably diseased kidney. Tympanite between tumor and liver.
20	Keen. The present case.	F.	34	Two yrs. Increased during pregnancy. Size 9 by 111 cms., and 44 cms. thick at base; weight 113 grms. (31oz.); adenoma of bile-duets.	Pour very large vessels tied with catgut.			



(8) *Will not the escape of the bile produce dangerous or fatal peritonitis?* — Even the escape of bile into the peritoneal cavity, which would naturally excite great apprehension, seems to be more of a theoretical than a practical objection. In only two cases of the twenty was any such discharge of bile observed. This gave no trouble, as it escaped externally in both instances. Pavé has stated that no harm arose from such a free escape of the bile into the peritoneal cavity in his experiments in dogs; and Lane⁷ has reported a case of probable rupture of the gall-bladder, in which, after five weeks, he evacuated over three gallons of bile-stained fluid, yet the patient recovered. Moreover, there is probably a considerable escape of bile into the abdomen in some of the cases of cholecystotomy which recover; yet it is an accident that should be avoided if possible.

This fear of the escape of bile led me to insert a glass drain in the present case. Part of the tumor was removed by enucleation and part by the cautery; and I feared that either surface or both would allow of the escape of bile since the sutures did not, of course, accurately approximate the surfaces. The result showed that the precaution was needless, and after forty-eight hours the drain was removed, no bile or bile-stained fluid having been observed.

It being conceded, then, that more or less of the liver could be removed without sacrificing life, either primarily or by its after consequences, the next point is

(9) *The method of removal and especially the means for the prevention of hemorrhage.* — In my own case there was absolutely no trouble in this respect. The base of the tumor was severed by repeated small touches of the cautery-point; the large vessels were all seen and ligated before their division by the cautery; and the small ones either did not bleed or ceased bleeding upon slight touching with the dull red platinum point or after pressure with a sponge dipped in hot water. From the portion that was enucleated by the thumb-nail, absolutely no hemorrhage other than slight oozing took place, and I would especially commend this procedure. It was simple, easy and rapid. The methods adopted in the other nineteen reported cases have been various; and often, as in the present case, two or more have been combined with great advantage; thus the tumor has been excised; ligated and excised; ligated and cauterized; ligated, excised and cauterized; and in three cases was enucleated.

(10) *Treatment of the stump.* — In nine cases, after completion of the operation by the methods already named, the stump was returned to the abdominal cavity. In three cases the lips of the hepatic wound were first sutured, in one of them (No. 17) with as many as sixteen sutures. Of these nine all but one recovered. In six cases (Nos. 2, 5, 6, 7, 13, 16) the stump was sutured in the abdominal wound at the close of the operation. In two (Nos. 5, 7) there was a free discharge of bile through the wound. All of these recovered. In four cases (Nos. 12, 14, 18, 19) the liver was attached to edges of the abdominal wound before the removal of the tumor. In one case (No. 14) ligation of the pedicle, fixation to the abdominal wall and immediate amputation of the tumor was practised; but in the other three a true extra-peritoneal treatment was carried out. In one case (No. 12) it was done in two stages, that is, primary suture to the abdominal wall and a later amputation. Lücke (No. 18) sutured the pedicle to the abdominal

wall, surrounded the protruding tumor with iodoform gauze, and tied the pedicle with a rubber-tube, which was gradually tightened. Terrillon (No. 19) made an artificial pedicle (24 cm., [9½ in.] in circumference) by constricting the attachment by rubber-tubing and sutured it to the abdominal wound, the tumor protruding externally. Under an iodoform dressing this gradually withered, and was removed on the seventh day. All of these four extra-peritoneal cases recovered.

(11) *Results.* — In one case (No. 12) the result is not known. Of the other nineteen, seventeen recovered, and only two died, one on the day of the operation, presumably from shock, the other on the twelfth day, from sepsis.

(12) Conclusions:

a. Both experiments on animals and operation on man have shown that tumors of the liver, and even large portions of the liver itself, can be removed without undue disturbance of the function of the liver; the experimental evidence makes it probable that the liver tissue may be regenerated and the loss made good.

b. That the escape of bile into the peritoneal cavity is not a usual phenomenon after such an operation; that it may generally be prevented either by searing the raw surface of the liver, by ligation, or by securing the stump in the abdominal wound, and that, even if the bile so enters the peritoneal cavity, the result is not necessarily fatal.

c. Haemorrhage need not be greatly feared. The vessels can often be tied separately or in mass, or cut through by the cautery, or controlled by pressure, or by a combination of these means.

d. The resection or amputation is best done by enucleation, by the cautery or by the knife or scissors, preferably perhaps in the order named. In case of a tumor with a very large base of attachment, the operation may be done in two stages, the base being surrounded by an elastic ligature in the interval.

e. The mortality thus far has been only about ten per cent.

GALL-BLADDER SURGERY.

(a) ONE CASE OF IMPACTED GALL-STONES; PERFORATION; DEATH WITHOUT OPERATION. (b) FOUR EXPLORATORY OPERATIONS ON THE GALL-BLADDER. (c) SIX CHOLECYSTOMIES FOR GALL-STONES.

BY MAURICE H. RICHARDSON, M.D.

My attention was first called to the importance of gall-stones by a case which occurred in the practice of Dr. S. J. Mixter some ten years ago. He will remember a woman who passed a very large gall-stone, at least an inch and a half in diameter, by rectum. Later this patient died from acute intestinal obstruction caused by the lodgement of another stone so large as to obstruct entirely the lumen of the bowel. This condition must be considered infrequent if not unique; but it shows one of those rarer conditions which may occur after the dislodgement of an impacted stone and its escape into the intestine.

During the next six or eight years I saw occasionally cases of biliary colic, soon relieved by the escape of the stone. I have made it an invariable rule to examine the faecal discharges for at least a week after an attack of biliary colic. My method has been to pass the faces through a fine-meshed sieve, myself. Great care has to be taken in many cases not to crush the soft and recently-formed stone. The importance

⁷ Lancet, 1891, i, 1091.

of this procedure, I think, will appear in the cases which I have to report. Had such care been taken early in the history of my operative cases, the diagnosis would have been very clear indeed. So carelessly have these investigations been made, when they have been made at all, that I have not been willing to eliminate the existence of gall-stones from the fact that none have ever been discovered in the discharge. I recall one case very distinctly in which there was a clear history of biliary colic, and where at the end of a week I found a small, bright yellow stone of very recent formation, which without the most careful manipulation would have been crushed in passing the fecal discharges through the sieve.

Before reporting this evening those cases of prolonged and unnecessary suffering which have been entirely relieved by operative measures, I wish to report in considerable detail one of those lamentable occurrences which have not been infrequent in the history of medicine, and to avoid which is one of the chief objects of this paper. I refer to the case of a young woman, prominent in society, with a young family and with everything to live for, who died from the perforation of the common duct by an impacted stone, with all the symptoms of a general peritonitis. In this case, as in all other cases to be reported, the matter of diagnosis was of the first importance. It is very necessary for us to differentiate impacted gall-stones from malignant disease. The distinction between certain cases of gall-stone impaction and cancer or tumor pressing upon the duct and causing jaundice is at times very difficult. Some of the most skillful diagnosticians have erred in this respect. In most of the cases published herewith, some experienced man has been mistaken. In the majority of cases the symptoms are almost entirely subjective. There are no physical signs whatever on which we may depend for diagnosis, beyond jaundice and emaciation. The histories of the cases should therefore be taken with great care, and much reliance must be placed upon the patient's statements as to the origin, duration, character and direction of the pain. Believing firmly that the diagnosis must depend more upon the history than upon the physical examination, I shall report most of the following cases in some detail as to their subjective symptoms. The statements of the patients which have any bearing upon the diagnosis I have reproduced from my short-hand notes. As will be seen in all of them, whether simple exploratory incision or cholecystotomy for the removal of stones, with one or two exceptions, there have been no local physical signs whatever.

(a) GALL-STONE IMPACTED IN THE COMMON DUCT; PERFORATION; DEATH WITHOUT OPERATION.

CASE I. Mrs. T. D. P., aged thirty. First examined December 3, 1888. Married seven years; three children; two miscarriages; belongs to a family who have all died at about middle age or young. Father died of consumption; one brother died of appendicitis; a sister died at sixteen of some mesenteric trouble; another of Roman fever in Florence; one sister living and well; one brother living and well; one paternal uncle died of consumption; another lived until he was fifty and died of some brain trouble; grandmother now living.

Mrs. P. has been troubled with epilepsy. Has had post-partum hemorrhage twice. More or less womb difficulty. With the exception of the epilepsy and the

uterine trouble has always been well. About seven years ago there was cramp in the stomach and colic, just below the right breast. It was a pretty severe pain; would come on any time—night or day. No vomiting until recently. In the beginning she took sulphate of zinc to make her vomit. This would relieve the attacks. There seemed to be no connection between the food and the attacks of pain. Of late years the attacks have been of the same kind and constantly more severe. Between the attacks she would be perfectly well. Had a slight attack in July, and in the latter part of August another, which has persisted ever since. It was preceded by a miserable feeling. Jaundice has been present all the time since August. Movements of the bowels white, and urine very dark. The pain in this attack has been in the pit of the stomach, and it was so severe that she could not bear the bedclothes.

Physical Examination. — A large, strong, healthy-looking woman, considerably jaundiced. No evidence of disease in the heart or lungs. Urine dark-colored. Nothing in the abdomen. Liver somewhat enlarged. No distention of the gall-bladder could be made out. There was some tenderness in the region of the gall-bladder. Pulse and temperature normal.

This case was sent to me by Dr. Paddock, of Pittsfield, with diagnosis of gall-stones obstructing the common duct. I concurred in this diagnosis, and on November 14th wrote: "It seems to me that this is a case of gall-stones, which has resulted in obstruction of the common duct. I do not believe that anything can be done to relieve gall-stones except surgically. I should not advise operation in this case unless the symptoms are more severe than they are at present." December 24, 1888: "I am inclined to look upon the case as one of obstruction to the bile from gall-stones. During her visit here I think she has improved. Dr. — has seen her with me, and looks upon it as a case of neurasthenia, with gastralgia. As far as I am concerned I do not, and have not seen any indications for surgical interference." Early in March, 1889, Mrs. P. was taken with symptoms of violent peritonitis, and on the 5th I was sent for to open the abdomen. She died a few moments after my arrival in Pittsfield. At the autopsy, a large stone was found in the common duct. Perforation had taken place and the patient had died of peritonitis.

It is quite evident that this most unfortunate result might have been avoided had we known positively that there was a large stone impacted in the common duct. It was impossible to be sure of this, however, and it was the opinion of one eminent diagnostician that this condition did not exist. The symptoms at my last examination were improving, and it seemed after a deliberation of four weeks and a careful study of the case best to delay. In the light of the experience which I have acquired since, and from the gratifying results which have followed exploration in these cases, I should not now hesitate a moment in advising as strongly as possible the necessity of an exploration. While it is well known that stones, even of large size, make their way safely into the intestine, it is certainly not infrequent that a disaster like this results. In a case with a similar history I should not be willing now to take the responsibility of delay. Persistent localized pain with exacerbations accompanied by jaundice, if due to a stone at all, mean a large one hopelessly impacted, and demand interference.

(b) EXPLORATORY OPERATIONS ON THE GALL-BLADDER.

CASE I. Tumor of the gall-bladder, due probably to malignant disease; abdomen opened; gall-bladder emptied; cancer of the head of the pancreas pressing on the common duct; death at the end of ten days; autopsy; cancer of the head of the pancreas extending into the liver.

C. C. R., aged thirty-nine. Examined September 7, 1889, with Drs. Carlton and Peirson. Two years before, an attack of malarial fever lasting four or five weeks, followed by jaundice. Has had recurrence of the fever and the chills since. Eight weeks after the appearance of the jaundice a large tumor was noticed below the liver. The jaundice disappeared about a year ago, and he was perfectly well during the summer. In the spring of the present year the symptoms reappeared with a great deal of malaise. There was considerable loss of flesh; jaundice was present and persistent. Went to Clifton Springs, and in three weeks was much improved. At the end of that time had a gall-stone, which caused great pain for two hours and a half. The gall-stone passed and he felt better than he had for the previous six or eight months. The jaundice did not disappear, although he bleached out a little. The pain was very sharp when the stone passed. He never had had any such thing before. He looked for it in the first discharge, but did not find it. With the exception of these symptoms his general condition was good. Family history good. Loss of flesh excessive. Under the margin of the ribs on the right side, there was a round, fluctuating tumor extending down into the right iliac fossa. Two or three hard nodules could be felt at the upper part of the tumor. Very much jaundiced and very much emaciated. The tumor was apparently movable. Pulse good and general condition such as to justify interference. Probable diagnosis: malignant disease obstructing the common duct.

On careful consideration of this case it seemed to me probable that the man's disease was malignant, although there was a clear history of at least one gall-stone attack, and that the distention of the gall-bladder and jaundice were due to an obstruction somewhere in the common duct. Exploratory laparotomy was performed on the 9th of September, 1889. Incision was made over the right linea semilunaris, on the edge of the liver, about three inches in length. The liver was found with several small nodules on the under part of the great lobe. The gall-bladder was much distended and reached as far as the crest of the ileum. The gall-bladder was emptied through an aspirating needle and about a quart of fluid as clear as water was withdrawn. The hole made by the trocar was sewed up with fine silk. Exploration of the parts revealed malignant disease in the neighborhood of the common duct and the under surface of the liver. The patient died at the end of about ten days. Post-mortem examination showed that there was cancer of the liver with primary disease of the head of the pancreas.

In this case an operation was performed because I was not perfectly certain of the diagnosis. There was very little difference of opinion among those who saw the case that the cause was probably the pressure of a new growth. I did not feel, however, that it was absolutely certain that the cause could not be removed, and this in my opinion, then as now, justified the op-

erative interference. The fatal result was not due to peritonitis or any wound infection. The man died at the end of a few days, as, in my experience, so many do who are much reduced by long-standing malignant disease.

CASE II. S. L., aged fifty-eight, painter, married. Massachusetts General Hospital, July 22, 1890. Thirty-eight years ago had Panama fever — chills and fever. Dyspepsia at times. Eight months ago noticed that he was losing flesh and running down. At times troubled with colicky pains and flatus. No vomiting or pain after food. Since then has been losing flesh and appetite. Has lost forty-five pounds. Six weeks ago noticed lump in right hypochondrium, which patient thinks moves and feels like a bladder. Five weeks ago began to be jaundiced. This has increased, with clay-colored stools and intense itching.

No pain or other subjective symptoms. Examination showed marked general jaundice and emaciation. Skin was dry and harsh and covered with excoriations. The tongue was dry, with slight brown coat. There was a large mass in the epigastrum from enlarged liver, on which a small nodule could be felt. He vomited about a pint of brownish, muddy fluid on July 12th. No blood was found in the vomitus by the microscope. Stools were clay-colored. On July 22d, under ether, a vertical cut was made over the region of the gall-bladder. The abdominal wall was very thin and lax. The gall-bladder was found non-adherent, dilated. The hand introduced into the cavity of the abdomen could detect nothing suggesting neoplasm. There were no stones either in the gall-bladder or in the ducts. The bladder was aspirated and about a pint and a half of pure bile was withdrawn. The fundus of the gall-bladder was then stitched into the abdominal wound with interrupted silk sutures. The bladder was opened *in situ* by a one-inch incision. The mucous membrane was found thickened and injected. A probe was with difficulty passed into the common duct. The bladder was thoroughly washed out with warm water and a rubber drain left in it. The usual dressing, with swathe, was applied. There was a discharge of about one ounce of bile daily into the wound. On the 26th the bowels moved. Stools still clay-colored. Urine the same as before. He gradually failed, and died on 31st of July. The autopsy showed cancer of the head of the pancreas.

In this case, which was referred to me from the medical side as a case of probable gall-stone impaction, a fatal result followed the operation, as in the previous case, where the patient was subjected only to the slight danger of exploration. The wound healed well, and there was no peritonitis. If his disease had been less advanced, or if he had been brought to his state of weakness by a simple obstructive cholæmia, I think he would have recovered. The case, though fatal, was not so from the operation.

CASE III. Mrs. Robert H., aged forty-one, Lawrence. Seen with Dr. Chamberlain on April 9, 1891. A week or two before, Dr. George M. Garland, of Boston, had made a careful examination and advised an exploratory laparotomy. Had the grip about a year before, and has not been well since. Has suffered dreadful pain in the stomach during the past summer (indicating the region of the stomach on the left side.) The pain has continued more or less for a year. In the previous July fell on a chair striking the left side. The pain comes on suddenly. She be-

gan to be jaundiced on October 1st. In the beginning the pain was entirely on the left side, and did not go into the right until two months ago. There has been great loss of flesh, without vomiting. Used to have chills. Vomiting has come on within the last six weeks.

No abnormal appearance to the vomitus. Stools clay-colored; urine dark. She has complained of pain in the region of the right kidney, and there is great tenderness over the gall-bladder. No elevation of the temperature. On examination there was a tumor found in the region of the gall-bladder which shaded off in different directions. It seemed to me to be the liver. I thought at the same time I could feel one or two small nodules. Diagnosis: probably malignant disease of the liver. I concurred in the opinion of Dr. Garland as to the advisability of an exploratory laparotomy on the chance of finding something that an operation would remove. A longitudinal incision was made in the right linea semilunaris over the gall-bladder. The liver was immediately exposed, and, with the gall-bladder, came into view. The gall-bladder was normal, but there were numerous cancerous nodules in the liver. The wound was closed with interrupted wire sutures. The whole operation did not take over ten minutes. She made a good recovery, and her death, which took place some months later, was not hastened by the exploration, which satisfied physicians, patient and friends.

CASE IV. Mrs. L., aged sixty-two, a patient of Dr. Jackson, of Weston, was seen in consultation with Dr. Cutler, who advised an exploration of the gall-bladder. Mrs. L. said that she had had bilious attacks and pain, accompanied by chills, for some time. The pain was very sharp in the right side, running to the back and shoulder; also a burning, deep in the right hypochondriac region. No real dyspepsia. There is a burning in the side, and at times she cannot straighten up on this account. No loss of flesh; some loss of strength. A small, smooth mass, the size and shape of a kidney, slightly movable, in the region of the right kidney; an enlarged area of hepatic flatness, and an apparent enlargement in the region of the gall-bladder. Temperature persistently above normal daily for the past five months. Never more than 102° ; usually from 100° to 101° . Sleep good; bowels apt to be constipated. The diagnosis was necessarily obscure, but it seemed wise to us all to make an exploration. On November 17, 1891, I made the usual incision parallel with the ribs on the right side until the gall bladder was reached. The parts were much adherent to one another, and the omentum was very firmly fastened to the gall-bladder. There was an adhesion also to the hepatic flexure and the beginning of the transverse colon. These adhesions were very carefully separated from the gall-bladder, and, with the hand introduced into the abdomen, nothing could be felt in the common, hepatic or cystic duct. Nothing abnormal could be detected in the region of the pancreas. The gall-bladder was contracted, and evidently had been the seat of some trouble. The whole condition was very similar to that found in the cases of prolonged gall-stone impaction, where the gall-bladder has become contracted and its walls thickened. Mrs. L. made a very good recovery indeed from the operation, and at first was relieved of the dragging pain of which she complained before. Later she had a good deal of trouble in one shoulder, which had no connection whatever with the operation. I am

informed by Dr. Cutler that of late she is somewhat better than she was before the operation, but, up to quite recently, the attending physician, Dr. Jackson, states there has been no benefit whatever from the exploration.

(c) SIX CHOLECYSTOTOMIES FOR GALL-STONES.

CASE I. Mary W. This was the case which was reported in the JOURNAL, Vol. CXX, p. 414. She was referred to the hospital by Dr. Titcomb, of Concord. She had a history of pain in the side, associated with a very movable tumor on the right, just below the border of the ribs. The opinion was rather in favor of a movable and malignant kidney, though Dr. Titcomb had sent the case in as one of gall-stones. I found it to be an enlarged and distended gall-bladder, from which I removed six stones of moderate size. One was squeezed from the common duct into the duodenum. The sac was partially removed, and the body sewed into the abdominal wound. A fistula remained, which closed in a few weeks, and there has been no trouble since.

CASE II. Mrs. C. K., aged forty-eight, married, Massachusetts General Hospital, September 7, 1890. Has passed the menopause. At times has been subject to attacks of quinsy. Three years ago there were chills and fever. One year ago first noticed pain in the right side, coming on gradually. Afterwards the pain was in the epigastrum, and was not associated with ingestion of food. At the same time jaundice appeared. This has continued ever since, although at times less marked than at present. Since then there have been several similar attacks of pain, coming on rather quickly, and disappearing gradually. The pain is of a cutting, raw variety, beginning always in the right hypochondrium and radiating into the epigastrium. The attacks have always been associated with vomiting. Stools greenish. Nothing has ever been found by physicians in the contents of the stools. Ten days ago there was a very severe attack, requiring morphine. There had been none before for a month. Two days ago there was another severe attack. The itching at times is intense. Duration of attack eight to ten hours. There has been average loss of flesh. Fairly nourished; skin saffron yellow; pulse slow, and at times intermittent. There is a trace of albumen in the urine, with an occasional hyaline cast and renal cell. Tenderness at the edge of the liver, which can be felt, smooth and regular. Gall-bladder not made out.

On September 9th, under ether, an incision four inches in length was made in the right linea semilunaris from the level of the margin of the seventh rib. The abdominal wall was thick and vascular. Omentum firmly adherent along the lower margin of the liver. The adhesions were broken up with the finger, and the gall-bladder, which was atrophied and flaccid, exposed. A hard, round mass was felt by the finger in the region of the common duct. The bladder was drawn up and opened. With two fingers of the right hand down deep below the common duct and with the index-finger of the left hand in the gall-bladder, a stone could be felt as large as a walnut. After some difficulty it was withdrawn. This stone was in the common duct. Another stone was found in the hepatic duct, and was removed in fragments with long, common, polypus forceps. This stone was followed by a copious flow of bile, which was kept out

of the peritoneal cavity as much as possible with sponges and irrigation. The gall-bladder was too much retracted and tied down by adhesions to admit of its being stitched to the abdominal wall. The upper lip of the incision, however, was drawn up to the parietal peritoneum, while the lower was left loose. A glass drainage-tube was placed in the gall-bladder, and iodoform gauze packed about it. The abdominal cavity was thoroughly irrigated with warm water and the wound left partly open. The lower half was brought together with wire sutures and the upper half packed with gauze around the tube. A large absorbent dressing was applied with rubber pellets about the tube, and the whole fastened in place with plaster and flannel swathe. The operation lasted one hour and an eighth. In the evening the dressing was stained with bile, which escaped freely from the tube on its removal. A siphon was arranged to carry off the bile. Patient put upon liquid diet. Thirty-six ounces of bile were siphoned off in the next twenty-four hours.

The patient went on very well indeed for several weeks. The fistula became well established. Jaundice slowly began to disappear. Gauze was removed from the wound on the 13th. The wound was clean. On the 19th the feces were slightly stained with bile. On the 25th there was a discharge of very foul pus from the wound. The temperature had been up for some days. The pain in the back and right side, which had been constant for several days, gradually disappeared after the discharge of pus. Temperature became normal. Siphonage was omitted. Later the temperature kept rising, and the general condition was worse. There were chilly sensations and fever. The malarial history was thought to account for the chills. On the 29th an opening was made in the lower part of the wound communicating with a pus cavity which contained about half an ounce of pus. The opening was dilated and the cavity syringed out. Siphonage begun again. On October 2d there was a slight discharge of pus. The amount of bile was reduced to fifteen ounces. There was considerable vomiting. The temperature at times rose to 104°. She died on the 10th of October.

At the autopsy a gauze sponge was found at the bottom of the pus cavity, from which there had been an infiltration posteriorly, and from which the patient died septic.

In this case, at the time of the operation, it seemed to me that we had a most formidable condition of things. The gall-bladder was badly torn, and it was so contracted that it was out of the question to think of trying to sew it to the abdominal wound. The long obstruction to the flow of bile had dilated the liver-ducts to such a degree that large quantities of bile were stored there, ready to pour out over the wound and into the abdominal cavity the moment the obstruction should be removed. When the stone was removed from the hepatic duct, there was an abundant escape of bile, much of which covered the intestines and escaped into the peritoneal cavity. This formidable emergency could be met only by making anastomosis between the gall-bladder and intestine, or by closing entirely the bladder by suture, or by doing as I did at the time, putting a tube into the hepatic duct and tying the gall-bladder, or its remains, about the glass tube. In this case, as in several subsequent ones, this method has proved perfectly satisfactory and successful.

During the operation large quantities of bile escaped, in spite of all efforts to prevent it, and covered the surrounding parts. The immediate effect of the introduction of the tube with the gauze packing was to shut off the rest of the abdominal cavity. On removal of the gauze, the general cavity of the abdomen was entirely and firmly protected by the recent adhesions.

The method employed at that time to prevent the leaving of sponges in the abdominal cavity was to have a special nurse whose duty it was to count the sponges before and after the operation, to watch such as were introduced into the abdominal cavity, and to be responsible for them as far as possible by devoting her attention to nothing else. At this operation the nurse counted the sponges very carefully before and twice after the operation, and reported them all present. It seemed to me at the time that these precautions were ample, and as thorough as any taken elsewhere. The lesson which I have learned is to have more than one count made by at least two different persons, both before and after the operation.

CASE III. Harry K., aged twenty-four, detective, Massachusetts General Hospital, October 1, 1891. After leaving the hospital where he was in the spring of 1889, with similar symptoms, which were not treated surgically, he felt perfectly well until September 15th, when he had a severe attack, which lasted four weeks. Since then he has had six or seven attacks at intervals of from three to five months. The interval increased and the duration of the attacks diminished until the present one, which has continued since August 22, 1891. He has received all kinds of treatment, including massage. Morphin is the only thing that relieves him. Ether makes him crazy. When in pain he does not know what he is doing, though he can tell you afterward. The pain comes on suddenly. It starts in the pit of the stomach and travels through the right hypochondrium into the back. In some of the attacks he has been jaundiced. Bowels were constipated. There was blood in the dejections at times. He has lost considerable in weight the past two years. He has taken a great deal of morphin (nearly a grain, if not more) a day. When seen in the ward, the patient was very nervous and apparently in some pain. Attacks of pain came on about 3 P. M. This patient was examined by most of the physicians and surgeons in the hospital. Some advised operation, and others did not think it necessary. There was a good deal of doubt expressed as to the presence of any foreign body in the gall-bladder. Dr. F. C. Shattuck, who turned the case over to me, insisted that a stone was present, which proved to be so.

On October 6th an incision six inches in length was made parallel to the ribs and below the edge of the liver. It was carried well into the flank. The abdominal parieties were thick and muscular. The hand was introduced into the abdomen, and the gall-bladder found and drawn into view. The parts about the gall-bladder were slightly adherent to it. A small stone could be felt through its parieties. Over the stone the bladder wall was very thin and friable, and had every appearance of being about to be perforated. The bladder was incised, and a small, sharply angular stone removed. The wall was too friable to suture to the abdominal wall, and therefore a ligature was passed around the bladder near its base, and the whole removed. Previously a probe showed that the common

duct was patent. The lower end of the incision was closed with silk and wire. The upper end, about the stump of the gall-bladder, was packed with iodoform gauze, which was brought out of the wound. Dry dressing was applied. On the next day the dressing was stained with bile. The stitches were out on the 13th. The patient made a slow but gratifying recovery. He was very nervous, and seemed to suffer much for some weeks. The gauze was entirely removed on 23d. He was discharged from the hospital in November, and has remained well up to the present time (April 14, 1892).

In this case there was a good deal of difference of opinion, some thinking that there was nothing mechanical to cause the pain, and others being quite confident that a gall-stone was at the bottom of the trouble. The situation and impaction of the sharp stone, with the ulceration and inflammatory condition of the parts, seemed to me quite sufficient evidence that the whole trouble was caused by the calculus. His perfect recovery justifies the diagnosis and the operation. (Patient exhibited.)

CASE IV. George F., aged fifty-eight, gentleman. History of gall-stone extending over eight years, with occasional attacks of jaundice. Great suffering and almost complete disability. Referred to me by Dr. J. P. Oliver. Diagnosis confirmed by Dr. Fitz.

Operation on October 10, 1891, at St. Margaret's, assisted by Dr. Mumford. An incision parallel to the ribs was made just at the outer border of the rectus abdominis. Through a small space free from muscular tissue the gall-bladder was exposed by a small incision and the fingers introduced into the abdomen. A row of gall-stones could be felt in the cystic and common ducts. The base of the gall-bladder, which was in contact with the anterior abdominal wall, was united to the wound by numerous interrupted silk sutures. On opening the gall-bladder bile immediately escaped, and seven large stones, one after another, were removed from the cystic duct. By means of the polypus forceps the last stone, which projected into the common duct, was removed—the stone which had caused the jaundice in this case. After the operation a drainage-tube with siphonage was introduced into the gall-bladder. The patient made a rapid recovery, but a fistula still persists, and will probably require a secondary operation to close it. In this case, as in the first, the obviously safe method was to sew the bladder to the abdominal wall. There was nothing difficult about the operation.

CASE V. Mrs. E. L. W., aged thirty-seven, referred to me by Dr. George M. Garland, consulting physician, and Dr. Knight, of Milford, Mass., attending physician, December 15, 1891, entered the Massachusetts General Hospital. Present trouble began with pain in the stomach at the age of seventeen, which lasted about an hour. Had a few similar attacks, and then went two years without pain. From that time to the present there has not been a whole year without pain. First noticed jaundice a year ago. It was accompanied by pain and vomiting. No blood; urine dark. The pain was sharp and came on suddenly, lasted a few hours, and then went away. Jaundice came on a few days later. Has been jaundiced for the past year. Pain has been growing worse, so that she has been unable to work. Has had three or four attacks since last year. Diagnosis: gall-stones impacted in the common duct.

On December 29, 1891, an incision five inches in length was made, parallel to the ribs, on the right side. The incision was enlarged for the introduction of the hand. The gall-bladder was found with some difficulty, on account of the numerous adhesions. It was contracted and could not be brought in contact with the anterior abdominal wall. Stones could be felt in the common and hepatic ducts. An opening was made in the fundus of the bladder, and eight stones were removed from the common and hepatic ducts. One large stone was so firmly impacted in the common duct that it was impossible to stir it before it had been completely broken up by common polypus forceps, which in my opinion, is the best instrument for this purpose. The duodenum presented in the wound throughout the operation, and the manipulations of the stone with the right hand had to be made through the layers of the duodenum. During the manipulations large quantities of bile were discharged over the parts, which were washed off with warm water from time to time. The stones which were detached from the common duct would become lost in the dilated hepatic, and quite prolonged manipulations were necessary to recover them. A glass tube was placed in the hepatic duct, and iodoform gauze was placed about the tube down to the base of the gall-bladder, which had become much torn by the manipulations. A dry dressing was applied. There was considerable flow of bile. The stitches were removed on January 6th, and the gauze was out at the end of a week. January 9th the tube was out. A gauze drain was left in position. Bile was first noticed in the stools on January 18th. On February 10th the wound was entirely healed. Jaundice had then nearly disappeared and she was feeling as well as ever. She was discharged on the 16th of January, and has remained perfectly well ever since.

CASE VI. Elbridge B., aged fifty-two, referred to me by Dr. Fessenden, of Salem, and by Dr. C. F. Folsom, consultant, of Boston. Previous health good. Present trouble began with what he thought to be an attack of acute indigestion, after eating chestnuts, about eight years ago. The pain was described as "dreadful distress." A dose of morphine relieved him and he got up the next morning all right, that is, all right as far as the distress was concerned. He was very yellow for some days. The next attack was last July. He had jaundice, but no pain, nothing but "a miserable feeling all over." At other times it would be what he called a "horrible feeling." His weight was reduced from 170 to 125 pounds. The liver could easily be made out, but nothing else could be detected by examination of the abdomen. He was deeply jaundiced.

Operation was performed at St. Margaret's, on February 9, 1892, assisted by Dr. W. A. Brooks. An incision was made on the right side parallel with the margin of the ribs, at the outer border of the rectus abdominis. This brought me down upon a small muscular space at the outer border of the rectus just over the normal position of the gall-bladder. On cutting through this and exploring with the finger, I could feel gall-stones somewhere in the region of the common duct. The incision was enlarged downwards and outwards, and upwards along the outer border of the rectus, making a semilunar incision with the convexity downwards and to the left. The liver was distinctly enlarged and projected about two inches

below the border of the ribs. It was dark in color and had a congested appearance. In the sulcus where the gall-bladder was situated the omentum was firmly adherent, not only to the sulcus itself and to the under surface of the anterior border of the lobe, but to the fundus of the gall-bladder. There were no other adhesions. The gall-bladder was contracted and its walls were thickened. It was impossible to separate the adhesions of the omentum and the liver without tearing; I therefore clamped them and tied them off. This brought the fundus of the gall-bladder, from which the adhesions had just been cut, into view. An incision was then made into the fundus large enough to admit the finger. The whole lumen of the gall-bladder was not larger than the index finger. On dilating with the finger at the cystic duct, there was a sudden large flow of bile which pushed before it a large gall-stone three-quarters of an inch in diameter, faceted. This was followed in a few moments by another. I then dilated the cystic duct a little further and could feel another gall-stone, which I delivered with the forceps, having first crushed it. No other stones could be detected through the interior of the gall-bladder. I therefore inserted my right hand into the abdomen, and feeling through the stomach and duodenum detected a mass of gall-stones apparently lodged in the common duct. These, without much difficulty, were detached and pressed up into the hepatic duct, into the liver, beyond the opening of the cystic duct. With a great deal of difficulty I managed to squeeze them out through the cystic duct, and two more were delivered uninjured. The last one I caught with the common polypus forceps high up in the hepatic duct and removed. The operation, from the time of the ether until the end, occupied forty minutes. The wound was occasionally irrigated with warm water during the operation, and the parts were protected from the escape of bile, as well as possible, by packing with sterilized gauze. There was considerable hemorrhage from the liver at the point of the separation of adhesions. The patient's condition during the operation was excellent. It was impossible even to approximate the walls of the gall-bladder to the abdominal wound. I therefore put a glass drainage-tube through the gall-bladder into the hepatic duct, and packed around carefully with sterilized gauze and applied a rubber tube to the end of the glass tube for siphonage. This gentleman made an uninterrupted and rapid recovery, and was discharged from St. Margaret's, perfectly well, on the 25th of March. It took about three weeks to remove the gauze, little by little. At the end of that time the passage of bile through the common duct had become fully established. In a short time the abdominal wound was entirely closed by granulations, and the patient increased very rapidly in flesh and strength. The jaundice had almost entirely disappeared at the time of his discharge.

The most important factor in the diagnosis of gall-stones is the history. Physical examination adds very little, if anything, to it. Recurrent attacks of pain with transitory jaundice, persistent discomfort extending over a long period of time, accompanied even with a general cachexia, unless the anæmia is steadily progressive, are the most important diagnostic points in the distinction from cancer. Several patients upon whom I have operated, and others where I am considering the question at the present time, de-

scribe their discomfort as a "terrible distressed feeling," rather than actual pain. I have been struck by the similarity of the expressions used to give an idea of their sufferings. The presence of a dilated gall-bladder does not accompany the one condition any more frequently than the other. Patient examination of the discharges after an attack should be made, and all the feces should be passed through a fine sieve. Even the most experienced diagnosticians, however, may be mistaken. In most of my cases some one eminent medical man has been mistaken. I refer again to this fact to justify the opinion that in all cases where there is any doubt, the patient should be given the benefit of it, and an exploration should be made.

The prognosis in cases of long-continued impaction is certainly grave. In most of my cases I do not believe that Nature would ever have effected a cure, or not without great danger of some serious disaster, as in the first case reported. The prognosis after operation seems to me very encouraging indeed. With the exception of the second case of cholecystotomy, all have recovered, not only from the operation but from the symptoms demanding it. In the second case, I think I can claim recovery from the immediate dangers of the operation, and while the sponge was doubtless the direct cause of death, this accident could hardly have been provided against more carefully than it was at the time. I think that I can say that few men at that time took any more effective precautions than to have one experienced nurse whose duty it was to attend to the sponge and nothing else. The lesson I have already emphasized, is to confide that duty to no less than two individuals.

The best cut for operation, the extent of which is uncertain beforehand, is, in my opinion, that which starts a little to the left of the linea semilunaris, an inch from, and parallel to, the margin of the ribs, and carried across the fibres of the external oblique. At the outer border of the rectus there is a small space quite free from muscular fibre where the fundus of the gall-bladder is generally in contact with the peritoneum. At times the transversalis fibres intervene. Through this spot the bladder may be explored with one or two fingers. If necessary, the cut may be continued upwards along the outer border of the rectus, and downwards and outwards parallel to the margin of the ribs. In this manner a very satisfactory view of the parts may be obtained.

In most cases of long standing I have met with adhesions. At times it is very difficult to separate them. If it complicates or delays the operation there is the advantage of being less danger of bile escaping into the abdominal cavity. The fourth exploratory operation shows that a part of the discomfort, at least, may have been caused by the loaded colon dragging upon the gall-bladder.

If the bladder is loose and presenting, it should be sewed to the abdominal wound, once having completed the exploration of the common duct, and having become satisfied that in order to detach the stone it will not be necessary to have one hand in the abdominal cavity outside the gall-bladder. The line of suture having been completed the bladder may be opened.

Where the gall-bladder is contracted upon a stone, or is so inelastic that it cannot easily be drawn to the abdominal wall, or where it is necessary to open the common, hepatic of cystic duct, I believe there is no

method so rational or so successful as that employed in four of my cases (Fig. 1). A glass-tube fitted into the open duct and packed about with gauze, with the addition of siphonage, gives a most excellent and satisfactory drainage, with which I have as yet seen no bad results. This method may be applied to any condition of obstruction or impaction (Fig. 2).

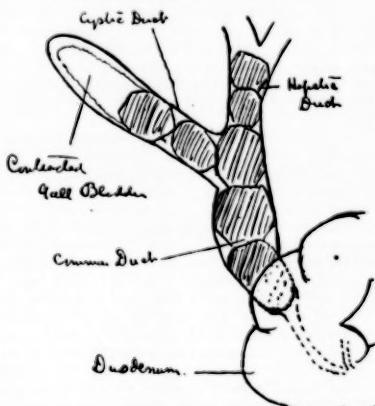


FIG. 1. Diagram showing position of stones in Cases II, V, VI.

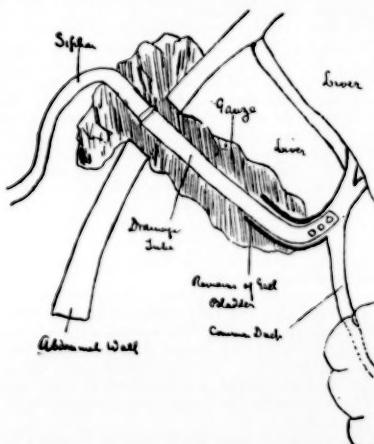


FIG. 2. Diagram showing position of drainage-tube and gauze.

The gauze should be removed gradually until all is out. I have seen most gratifying results follow this method of shutting off the general cavity of the peritoneum in operations for appendicitis and intestinal resections. The gauze, through its meshes, exercises an irritating effect which causes an almost immediate adhesive peritonitis.

The effect of bile escaping in large quantities into

the wound seems to be negative. In no case has there been any ill effect. It must have escaped in considerable amounts into the region of the gall-bladder in most of the operations. The anatomy of the parts, however, would tend to confine the fluid to the immediate vicinity of the foramen of Winslow. The transverse mesocolon and the hepatic flexures of the colon prevent bile escaping except in the right flank. The duodenum, pyloric end of the stomach, and the lesser cavity of the omentum through the foramen of Winslow, would be the only parts immediately invaded, and all these are apt to be shut off by adhesions in long-standing cases.

Patients suffering from symptoms of hepatic colic who have advanced into a profound cholelithia do not seem to offer as favorable prognosis as more recent cases, nor to be so favorable for operative interference. The stone is likely to be larger, and the danger of ulcerative processes greater, and the patient seems to run greater risks from attempts at relief; yet, so far as my observation and experience go, the most advanced cases have done as well as the most favorable ones, and I think the time has come when we should advise all patients, where a moderately certain diagnosis has been made, that after waiting a reasonable time for Nature to effect relief, the chances for recovery and usefulness are better when we resort to modern surgical art.

SECONDARY LAPAROTOMY FOR PISTOL WOUND OF THE LIVER, WITH A REPORT OF A CASE.¹

BY HOMER GAGE, A.M., M.D.
Surgeon to Worcester City Hospital and to Memorial Hospital.

THE natural history of wounds and injuries of the liver, aside from the interest which attaches to the subject of itself, is of interest because it illustrates the extent to which mutilation of the liver is possible without interference with its function, and because it illustrates the natural processes of repair. I desire, therefore, to present the following case with a few observations suggested by its occurrence.

On July 5, 1889, Frank M., aged fifteen, discharged a toy pistol, loaded with a blank metallic cartridge, with the nozzle held firmly against his jacket. It burnt a hole through his clothes and made a wound in the abdominal wall in the right hypochondrium, two inches from the median line and an inch below the margin of the ribs. There was but little hemorrhage from the external opening, and but little shock, and the wound, which was supposed to be purely superficial, was cleansed and closed. During the night he had very severe pain, and for ten days was confined to the bed. On getting up, it was found that he could neither stand nor sit upright, on account of pain in the region of the wound, but at no time was he regarded as very sick, and there was said to have been no rise of temperature. Within a few days the pain became more severe and he was obliged to return to bed. Then, for the first time, was noticed a decided fulness on the right side, with increased pain and tenderness, associated with progressive weakness and some rise of temperature.

I saw him first three weeks after the injury. He was decidedly undersized, pale, and much emaciated,

¹ Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

with a pinched, anxious expression. He complained of very severe pain in the left side, with inability to take a long breath. There was marked fulness over the right side of the abdomen in front, with lateral bulging of thoracic and abdominal walls. There was an area of flatness extending from the lower margin of the ribs on the right to the level of the umbilicus and across to the median line, and over this same area a feeling of elasticity with doubtful fluctuation. The wound had been healed, but its discolored site, surrounded by a red border, was still plainly marked. There was nothing abnormal in heart or lungs. His pulse was 120, temperature $99\frac{1}{2}$.

He was removed to the Memorial Hospital, where on July 29th I made a vertical incision two inches long, with the scar of original injury for its centre. The track of the wound was stained black, and was easily followed upwards and inwards to the peritoneum. A black stain on the peritoneum showed that it also had been perforated by the projectile, and a probe slipped easily through it at this point. Upon its withdrawal the opening was enlarged, and more than three pints of thin, dark greenish fluid withdrawn; the latter part of it was thick, almost like coffee grounds. The cavity in which it had been contained appeared to be shut off from the general peritoneal cavity, on its inner and lower sides, by firm adhesions. On the outer side was the parietal peritoneum, and above it extended around the margin of the liver to the diaphragm. A little more than one-half of the right lobe of the liver lay exposed. All the walls of the cavity, as well as the surface of the liver, were stained of a light green color.

The cavity was washed out with hot water, a counter opening made low in the right flank, and a dry gauze dressing applied. The contents of the cavity were sent to Dr. W. W. Gannett, of Boston, for examination, who reported that they consisted of "blood pigment and bile pigment in considerable quantity; much free fat in a finely divided form; fatty degenerated cells, probably liver cells, and a small amount of fibrin, but few leucocytes."

The patient rallied well from the operation. The wound was irrigated daily, and the profuse discharge, which resembled exactly the fluid removed at the operation, diminished slowly, becoming more and more yellow in color.

On September 7th, five weeks after entrance, he left the hospital with still some tenderness on deep pressure, and inability to maintain an erect position. During the subsequent two weeks he was treated as an out-patient, but with no improvement. The amount of discharge from the sinus increased very much and became of a dark brown color with large lumps of the consistency of putty, whose passage through the sinus caused severe pain. These lumps varied in size from that of a bean to that of a walnut, and were, under the microscope, found to consist of unorganized masses of free fat and fatty degenerated liver cells, stained with bile; no pus and no blood. One large piece firmer than the rest, was examined by Dr. Scribner, the pathologist of the hospital, and was found to consist of a fibrous stroma, similar to that of the liver, between the meshes of which were to be seen, in some places, liver cells in an advanced stage of fatty degeneration. In other places the meshwork showed where liver cells had dropped out and disappeared. On readmission to the hospital, his pulse was 100, temperature

$100\frac{1}{2}$. The area of hepatic dulness began at the fourth interspace on the right, and extended at least one and one-half fingers' breadths below the margin of the ribs. On the left side it was not increased. There was marked tenderness in the right hypochondrium, with induration between the sinus and line of incision. The sinus was irrigated daily with a double current catheter, and the amount of putty-like discharge steadily diminished, as did also the area of dulness and induration. The sinus closed October 10th, and by November 1st the area of hepatic dulness had receded to within normal limits, while there was no trace of induration and no tenderness. He could stand and walk erect, slept on either side indifferently, but still had occasional and unaccountable rises of temperature. On November 11th, four months after the injury, he was again discharged. His subsequent history, except for a small abscess which appeared at the site of incision, in December, 1889, has been uneventful, and he is now well, strong and at work.

The projectile was never discovered, and its nature must always remain unknown. But whatever it may have been, and however disposed of, the history of the case shows that it must have penetrated into the abdominal cavity and entered the liver, and probably near the lower margin of the anterior surface of the right lobe. From the hepatic wound had escaped the effusion of blood and bile which was subsequently found encysted, and around the wound had occurred a localized hepatitis with fatty degeneration and sloughing of some of the liver substance. The formation of the strong adhesions which protected the general abdominal cavity was due, I presume, to the smallness of the wound and the very gradual escape of the blood and bile. This view is supported by the absence of severe shock directly following the injury, and the time which elapsed before the swelling in the side was noticed.

This case is, I think, particularly interesting at this time, when the management of wounds of the larger viscera is receiving so much attention, because it illustrates the tolerance of the liver for injuries even of considerable severity, the absence of serious results after the loss of portions of its substance, and the natural tendency of wounds here, as in other tissues, if only they are given a chance, to heal of themselves.

In connection with this case, I have collected, with the assistance of Dr. R. Lorini, of Washington, the records of 272 cases of wounds and injuries of the liver, in which the relative frequency of the more important complications, and their fatality, are, I think, quite accurately portrayed.

In classifying these cases, we find that they divide themselves naturally into two groups, according to the manner in which the violence has been inflicted. We have the penetrating or direct wounds, which result from the passage of some foreign body through the abdominal parieties and into the liver, and the cases of rupture from indirect injury, that is, without perforation of the abdominal wall, such as from a blow, fall or crush. Of the direct injuries, we find 164 cases with 58 deaths, a mortality of 35.3%. Of the indirect, 108 cases with 92 deaths, a mortality of 85.2%. Dividing the former class again into two groups, we find that of 54 punctured or incised wounds, 24, or 44%, proved fatal, while of 110 gun-shot wounds only 34, or 30%, were mortal. Of the 272 cases, 150, or 55.5%, died. These figures correspond very closely

with the tables of Edler, which showed a mortality of 39.1% after shot wounds and 55% of all cases. It will be seen, therefore, that wounds of the liver are far from necessarily fatal, and that from penetrating wounds nearly two-thirds of all cases may be expected to recover.

As was to be expected, the most frequent, as well as the most fatal, complications were internal hemorrhage and peritonitis. Curiously enough, the presence or absence of these important factors is unnoticed in a majority of published reports, and the frequency of their occurrence after hepatic injury, as here indicated, is therefore only approximately correct. Of the 54 punctured and incised wounds, internal hemorrhage is mentioned as occurring in only eight, or about 15%. Of these eight, five, or 62½%, were fatal, so that of the 24 deaths from these injuries 20%, at least, were the result of internal hemorrhage. In the shot wounds, my records are too incomplete to enable me to draw any conclusion with regard to the frequency or fatality of internal hemorrhage. Of the 108 cases of rupture from indirect violence, internal hemorrhage is mentioned as occurring in 20, or 20%, and as being fatal in 18, or 90% of the cases in which it was noted.

Peritonitis occurred in 10, or 20% of the incised wounds, and in 10% of the shot wounds. Eight of the former died, or one-third of all the deaths in that class, and of the shot wounds in which peritonitis was developed, six proved fatal, or one-fifth of the total mortality. Its presence was noticed in 15% of the ruptures, and it was responsible for 14% of the deaths.

Abscess of the liver was observed four times as a sequence of incised wounds, with three deaths; five times after rupture, with four deaths, and three times after shot wounds, with one death. It is, therefore, one of the rarer sequels, having occurred in only 5% of all cases.

An escape of bile through the external wound seems to be a common accompaniment of gun-shot wounds, being present in 35% of all cases. Only five of the 37 cases in which it was observed, however, proved fatal, and in these the fatality cannot properly be attributed to the establishment of the biliary fistula.

One of the most interesting features in this collection of cases is the record of fifteen instances in which a penetrating wound of the liver was accompanied by loss of substance with but a single death. In twelve of these cases a piece of the liver was found projecting through the opening in the abdominal walls, and in nine it was ligatured and cut off; in the other three it was allowed to slough off, and in three cases pieces were washed out by irrigation during convalescence, as in the case which I have just reported. The amount removed is, in one instance, described as the size of an apple, in another as large as a goose egg, and in a third as weighing one and one-fourth ounces. In none of them were any ill effects observed.

These figures, though necessarily somewhat incomplete, indicate, I think, with sufficient clearness, the two great dangers which we must meet in these cases, namely, hemorrhage and peritonitis. Abscess, we have seen, is comparatively rare, and, when present, is a later complication to be dealt with, as if of entirely independent origin. The escape of bile is of consequence only when it takes place into the abdominal cavity, and then only as a cause of peritoneal inflammation. Even the loss of liver-substance may take place without serious danger. The problem is the

management of hemorrhage and the prevention of peritonitis.

In the case of punctured and incised wounds, or of bullet wounds, it would seem that exploratory incision, with a careful cleansing of the abdominal cavity, whenever necessary, was clearly indicated. Suture of an incised wound of the liver has already been performed three times, twice successfully; and if the nature of the injury were such that suture was impracticable, packing with gauze would do very much to control the hemorrhage, and would quickly exclude the general peritoneal cavity from contact with the wounded surface and its secretions. In the case of subcutaneous rupture of the liver, the problem is not so easily solved. For such cases no definite rule can be laid down. Whenever the manner in which the injury was inflicted, and the symptoms to which it has given rise, point distinctly to rupture of the liver as the probable lesion, incision and exploration are, at least, entitled to some consideration.

These injuries are apt to be so quickly fatal that there is no time for surgical interference. But when the primary shock is survived, and death seems imminent from a slow hemorrhage into the general abdominal cavity, exploratory incision is, I think, clearly applicable.

Clinical Department.

TWO CASES OF CHOLECYSTOTOMY.¹

BY A. T. CABOT, A.M., M.D.

THESE cases of operation on the gall-bladder illustrate two quite different conditions. The first is an example of dilated gall-bladder, due to a stoppage of the cystic duct by a calculus, the condition not being complicated by any considerable inflammation in or around the gall-bladder. In the second case, on the other hand, there was a very great amount of inflammation about the gall-bladder, and the stones which were the cause of the trouble had apparently led to a perforation of the cystic wall, and had escaped into an abscess cavity, lying probably behind the gall-bladder. As the diagnostic points of these conditions are of interest to the surgeon considering the question of operation, the clinical histories are given at some length.

CASE I. Mrs. P. was seen by me September 30, 1891, when I obtained the following history:

For ten years she had been subject to attacks of membranous enteritis, accompanied by nausea, griping pains in the abdomen and constipation. For the past six or seven years she had had frequent attacks of severe pain in the epigastrium which always required the subcutaneous injection of morphia for their relief. These epigastric attacks always occurred at times of especial fatigue, and came about four times a year; but since early last spring she had had none of them.

She had been feeling poorly, without appetite and listless, ever since the spring. In the summer she made a trip to the mountains and sea-shore without especial benefit. About the middle of August she had a severe lumbago; after three weeks the pain spread itself over the trunk as a severe general myalgia, and after persisting thus for a week, it gradually subsided, disappearing about ten days before my visit.

¹ Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

She was always of a constipated habit, had never had haematemesis nor had passed blood from the bowels. Had never been jaundiced nor had clay-colored stools.

After the subsidence of the myalgia, pain was still felt in the right hypochondrium; an examination made at this time revealed the presence of a tumor there. Mrs. P. was a well nourished woman of about thirty-eight, but somewhat pale. At the time of my visit there was still slight tenderness in the right hypochondrium, though I was told it was much less marked than it had been the week before. The abdomen was soft, and palpation was well borne and satisfactory. Below the liver was a smooth, globular tumor which reached downwards in the right side of the abdomen to a point below a horizontal line drawn across through the umbilicus. Upon long inspiration the tumor descended still lower into the abdomen, and when Mrs. P. turned on the left side, the tumor changed its position till it lay behind the umbilicus, part of it projecting over into the left side of the abdomen.

The opinion was expressed that the tumor was a distended gall-bladder, probably containing stones, and an operation was advised.

On October 7, 1891, the operation was done under ether. An incision parallel to the lower edge of the ribs was made, over the tumor. This was found to be the distended gall-bladder, and was easily lifted outside of the abdomen. A flat gauze sponge laid under it entirely shut off the wound, and the gall-bladder was then incised in its long diameter, making an opening about one inch long. Through this, considerable glairy mucus escaped, little, if at all, stained with bile. Four calculi were removed. One of the smaller ones lay in the opening of the cystic duct, but was easily dislodged. After this bile began to escape through the opening.

The gall-bladder was attached to the parietal peritoneum by a continuous cat-gut suture, and was also anchored to the skin by four silk stitches. The rest of the wound was closed with silk. A large absorbent dressing was then applied.

The patient made a good recovery, although her stomach at first was very delicate and intolerant of food. The opening slowly contracted, and closed without any drawbacks. Mrs. P. was not strong through the winter, and had some discomfort from dragging sensations about the cicatrix.

CASE II. The patient was a slight, delicate woman of twenty-nine, and was seen by me December 8, 1891, in consultation with Dr. A. L. Norris and Dr. J. T. G. Nichols. She had always been troubled with a very sensitive stomach that was easily and often upset. Married for a number of years, she had had but one child eight years before. Since that confinement she had always been subject to abdominal distress, and on two occasions had had attacks of what was thought to be pelvic cellulitis. She had also, during the previous two years, had occasional sudden attacks of pain in the lower part of the chest so severe as to take her breath away.

The present illness began four weeks before I saw her, and was characterized by abdominal pain so severe as to require the use of morphia for its relief, felt more in the right side than on the other. This was associated with much nausea and vomiting, and the breath was extremely fetid. There had been considerable fever with the illness, and Dr. Norris had detected a

tumor in the right side of the abdomen, which was very tender to the touch, and which he and Dr. Nichols believed to contain pus. The urine was scanty, high colored, and a specimen obtained at the time of our consultation was found to be stained with bile. There had never been any jaundice, and none was apparent to the eye at this time.

The abdomen was distended and tympanic, not very sensitive to pressure except in the right side where there was tenderness, both in the hypochondrium and in the right lumbar region.

This portion of the abdomen was occupied by a tumor continuous with the liver, and extending through the right lumbar region well round into that side; this did not move up and down with deep respirations. It being clear that suppuration was going on in the abdomen, probably connected with the gall-bladder, an operation was advised and accepted.

December 9, 1891, operation. Mrs. W. was etherized, and an incision was made over the tumor parallel to the margin of the ribs. This opened the peritoneum just inside of the point where the inflamed, thickened and considerably enlarged gall-bladder was adherent to the parieties. The gall-bladder could be clearly made out along its anterior edge, but outside and behind it was held fast in an inflammatory mass that masked its outlines. The gall-duct was thickened and enlarged to about the size of the little finger, but its walls were so resistant that palpation of it in search of impacted calculi was unsatisfactory. The most careful search failed to show any hard mass in it which suggested a stone.

The gall-bladder was opened, giving exit to about two ounces of thick, glairy muco-pus. The cavity was trabeculated and more or less diverticulated. A careful search was made in it for calculi, but none were found. A probe passed along the duct was arrested before it had gone half-way to the duodenum, but there was no hard body to be felt at the point of arrest.

The gall-bladder was stitched up tightly to the peritoneum, a drainage-tube was introduced through the opening, and the rest of the wound was closed.

The patient had a good deal of retching and vomiting following the etherization. The pain was considerable, but was kept under control by the moderate use of morphia.

During an attack of vomiting, the patient threw up three or four small biliary calculi, and a few days later several were passed in a movement of the bowels.

Improvement was slow but steady. She began to bear food well, and the mass in the right side slowly diminished in size. About a month and a half after the operation, a small biliary calculus escaped through the fistula. Two weeks later more calculi began to be discharged through the opening, and within the next month thirty-two little stones appeared in this way. All of these stones were small and much faceted.

At this time, while these stones were escaping, I was away, and Dr. Norris and Dr. Scudder, who were in attendance, found a hardness just to the outside of the fistula, which gave the feeling as if there were an accumulation of stones just under the abdominal wall; and the patient found that pressure over this spot forced the escape of the calculi. March 2d I etherized the patient for a thorough examination. After enlarging the fistula, it was found that the gall-bladder

had shrunk down to a very small size, and the inflammatory mass about it had almost wholly disappeared. Just outside of the fistula, at the point where the stones were thought to have lain, was a cavity between the gall-bladder and the parieties. During this examination the finger penetrated without force through what represented the lower wall of the gall-bladder, into the general cavity of the abdomen. Feeling through this opening in the direction of the gall duct, the parts were found a good deal tied up with adhesions, but there was no especial hardness or thickening to be made out.

It would seem probable that in this case, at the time of the first operation, the gall-bladder had already opened posteriorly and downwards, forming an abscess into which the stones escaped. Subsequently, as the abscess cavity contracted, the calculi were forced up to and through the fistula. The stones which were vomited and which passed through the bowels may have been in the cystic duct at the time of operation and have been masked by the swelling of the walls. In the absence of colic, however, at the time when they escaped into the duodenum, it seems quite as probable that they, too, were in the abscess cavity outside of the gall-bladder, and escaped into the bowel through some ulcerated opening.

RETENTION CYST OF THE GALL-BLADDER; OPERATION; RECOVERY.¹

BY S. J. MIXTER, M.D.

MRS. D., American, aged about thirty, married, has had six children. While carrying her last child, which was born in July, 1890, she had rather more pain than usual in the abdomen, especially in the right side. Delivery was somewhat difficult, and she was obliged to be up and about her work in nine days. When the baby was two weeks old, the patient had a severe attack of abdominal pain accompanied by nausea and vomiting, which required considerable doses of morphine for its relief. On the second day of this illness she noticed, for the first time, a tumor situated in the right side of the abdomen, tender on pressure, and somewhat movable. The general abdominal pain from which she was suffering was not referred especially to the position occupied by the tumor.

For several days after this attack she was unable to do her usual work on account of weakness and occasional pain; this, however, soon passed off and she was comparatively well again, but at times was troubled by tenderness in the right side. The tumor persisted, and she could move it from side to side and feel it, especially in the right loin. I first saw the patient early in September, 1891, at the Carney Hospital, about thirteen months after she first noticed the tumor, she having been referred to me by Dr. Munro, of the out-patient department, for examination. At this time she complained of increasing pain and tenderness in the right side, which almost prevented her from doing her usual work and taking care of her children, although she said that the tumor had not increased materially in size since she first noticed it.

On examination, a tumor, elastic, rounded, and occupying the right side of the abdomen, was found, ex-

tending from about the linea semilunaris back to the loin, and from the costal cartilages to a point about at the level of the umbilicus, slightly resonant in front of the lower part of the mass. It could easily be moved from side to side, in fact, to the left beyond the median line, and from its position, its mobility and shape, suggested most strongly a tumor or cyst of a floating kidney. This was the diagnosis at the time of the first examination, in which all the physicians and surgeons connected with the hospital who saw her until the time of the operation, agreed.

On October 2d, at the Carney Hospital, I opened the abdomen in the linea semilunaris, and found a cyst with smooth white walls, heart-shaped, and covered in its upper part by a very thin layer of liver-tissue; the right kidney normal in size and shape was found in its usual position. Careful search was made for a normal gall-bladder, but none could be found; neither could there be found any gall-stones or other cause of obstruction, though careful exploration was made by both finger and probe. The cyst was then drawn to the abdominal opening and securely stitched to the peritoneum and skin, and opened. A pint of clear fluid was drawn off, part of the cyst wall was excised, and a glass drainage-tube inserted and tied in, in the usual way. There was little shock, and recovery was uneventful — the cyst draining perfectly, the fluid gradually changing to a thickish, glue-like substance, and finally ceasing entirely.

The patient left the hospital in about five weeks, and soon after the sinus closed entirely. Since then she has regained her strength. There is only slight pain, no more than is usual after laparotomy, and she is able to do her regular work.

Dr. Whitney, who examined the contents of the cyst and the cyst-wall, reported that the wall consisted of fibrous tissue; that the inner lining, which was brownish in color, showed no signs of mucous membrane; and that the fluid was similar to that which would be found in any retention cyst. There was nothing that pointed to an echinococcus cyst. He was of the opinion that it was a greatly enlarged gall-bladder, the distention being due to a closure of the cystic duct in some manner.

This case is of special interest in connection with the other cases of cholecystotomy reported this evening, as in this case no gall-stones were found, the obstruction was in the cystic and not in the common duct, and the gall-bladder, as it probably was, contained only a clear fluid and no bile. It also shows how slight the symptoms may be from closure of the cystic duct compared with those of closure of the common duct. The attacks of pain in this case are better explained by some common form of gastric or intestinal disturbance than by any trouble of hepatic origin.

There was no jaundice at any time, and nothing which resembled biliary colic in character or severity. The obstruction of the duct and the growth of the cyst must have been of long standing, as when the patient first noticed the tumor, over a year before the operation, it was nearly as large as when it was seen and operated on by me. The cyst caused pain and discomfort simply from its size and pressure, and there were no symptoms of obstruction to the flow of bile, the history of the case throughout emphasizing the generally recognized fact that the gall-bladder is practically unnecessary to the animal economy.

¹ Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

CASES OF CHOLECYSTOTOMY.¹

BY GEORGE W. GAY, M.D.

MRS. C., aged thirty, was under Dr. Clement's care for about two months before she entered the City Hospital. Her symptoms were: severe pain, jaundice, obstinate vomiting, emaciation, debility, tenderness over the gall-bladder (but no distinct tumor), feces clay-colored, and urine dark brown, evidently due to bilirubin. A judicious trial of the usual remedies had failed to give any permanent relief.

The day after entering the hospital the gall-bladder was opened by an oblique incision four inches long, an inch below the ribs, and commencing about an inch to the right of the median line. The lower edge of the liver projected an inch below the ribs. The gall-bladder was readily found. It was not distended, and on being caught in a loop of silk and opened, was found to contain only a drachm or two of thick bile. No calculus could be detected by the finger outside the duct, nor by a long probe passed into it. After irrigating the cavity of the gall-bladder with warm water, a small stone was easily detected with the probe and removed. It was broken by the forceps during the extraction, but was estimated to be about the size of a large pea.

The gall-bladder was stitched to the abdominal walls, and the wound closed around the drainage-tube in the usual way.

The convalescence was uneventful. Jaundice was a good deal diminished in two weeks, and bile was apparent in the stools. In four weeks the discharge from the wound was very slight, and the skin was about normal. She was up about the ward in a short time, and was discharged nearly well in seven weeks.

At the end of three months the patient is well. The wound is entirely healed, and she is in her usual health. It should be stated that this patient had previously undergone laparotomy for the removal of "pus-tubes."²

Mrs. G., also a patient of Dr. Clement's, aged fifty-nine, was seen in consultation in July, 1891. The present attack was of nine months' duration, and was the fourth in as many years. The usual symptoms were present, to wit: jaundice, vomiting, pain, exhaustion, loss of appetite, high-colored urine, pale feces, and some emaciation. Being a very fat woman, no tumor nor area of dulness could be determined.

Operation July 5th. A vertical incision five inches long through very thick walls was carried down to the liver. Firm and extensive adhesions existed everywhere. In separating them with the finger below the liver, a profuse hemorrhage was brought on, which threatened to terminate her life upon the table. Nothing could be seen on account of the free bleeding, and no gall-bladder nor foreign body could be felt in the mass of fat omentum and adhesions. As the patient was failing the operation was reluctantly abandoned. The wound was packed with baked gauze, and covered with a large mass of the same material. Stimulants were freely given. She rallied somewhat for a few days, but never sufficiently to justify further efforts to find the gall-bladder and the obstruction. A low muttering delirium set in, and the patient died at the end of ten days.

¹ Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

² This woman has recently had an attack of biliary colic. She is now taking the Fluid Extract of Garden Celandine.

An autopsy revealed the presence of a calculus, about the size of a hazel-nut, in the common duct.

In the few cases of cholecystotomy that I have seen, the gall-bladder has not been distended, even though the jaundice has been most profound from the presence of gall-stones. On the contrary, in the case of a young lady upon whom I performed this operation several years ago, no stone was found, nor had she ever had jaundice. Yet the gall-bladder was enormously distended by about three pints of thick bile. She recovered, and remains well at the present time.

In one case of gall-stones, which was under my care many years ago, the ulceration extended in various directions. Calculi not only came through the opening in the skin, but several were coughed up. At the autopsy the gall-bladder was found to be entirely obliterated. —————

TWO CASES OF ABSCESS OF THE LIVER.¹

BY J. C. IRISH, M.D., OF LOWELL.

OCTOBER 17, 1891, I was asked by Dr. Edwards, of North Chelmsford, to do an operation for abscess of the liver. The patient, F. M., a man aged thirty, was just recovering from a moderately severe attack of typhoid fever, when Dr. Edwards, his attending physician, discovered upon the right side a tumor, with distinct fluctuation, extending from the free border of the ribs to the median line, and a short distance below the umbilicus, and nearly to the pelvis on the right. Dr. Edwards aspirated, and drew off about one quart of pus. Two weeks later, when I saw the patient, the tumor had regained its former size; the abdominal walls were evenly distended over it; there was no place showing any tendency of the abscess to point.

An incision, three inches long and about two inches to the right of the median line and below the border of the ribs, was made. A large quantity of pus, about one quart, was discharged.

The enormously enlarged liver was so completely adherent to the abdominal parieties that no precautions to prevent an escape of pus into the abdominal cavity were necessary. The abscess cavity was thoroughly irrigated, and a glass drainage-tube inserted. The patient made an excellent recovery.

A second case of liver-abscess I saw December 7, 1891. Mr. M., of Lowell, aged sixty, had had during the past ten years several attacks of icterus, which had speedily cleared up. He had never suffered from biliary colic. Previous to December 7th, he had, for two weeks, severe and continuous pain in the right shoulder. At the time I saw him his skin was but slightly tinged with bile. A large, fluctuating tumor occupied the upper and right side of the abdomen, extending nearly to the pelvis. As in the preceding case, a long incision was made and about three quarts of pus escaped. The abscess cavity was thoroughly drained; but a large amount of pus continued to discharge, and the patient died of exhaustion, February 27th. I am uncertain whether death was due to the continued formation of pus or to the extensive destruction of liver-tissue that had occurred.

In this case, too, the abscess wall was so closely attached to the abdominal as to prevent any escape of pus within the cavity of the abdomen.

¹ Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

Generally in the treatment of liver-abscesses, from whatever cause they arise, — dysentery, typhoid fever or gall-stones, — aspiration is valueless, except for purposes of diagnosis. As a curative means it fails here, as elsewhere, in dealing with an accumulation of pus. An incision through the abdominal walls, three or four inches in length, and a thorough drainage of the abscess cavity, I believe to be the only treatment. The operation is practically without danger. A long incision is especially mentioned, because with it we can more surely protect the abdominal cavity from the invasion of pus, when abscess and abdominal walls are not adherent. The fatalities of liver-abscess depend, not upon the operation, but upon the extent of the pus cavity and the relative amount of liver-substance that has been destroyed. Hence, the great importance of the earliest possible operation.

LARGE ECHINOCOCCUS CYST OF THE LIVER SUCCESSFULLY OBLITERATED BY LAPAROTOMY AND DRAINAGE.¹

BY MAURICE H. RICHARDSON, M.D.

ON Monday, August 3, 1891, Charles H., aged thirty-two, was sent into the Massachusetts General Hospital from East Boston. With good family antecedents, he had always enjoyed the best of health up to the present illness. At the age of twelve he went to sea, and for eighteen years was knocked about the world in the capacity of able seaman. Never was in Iceland. Always had a dog on board ship. On the 30th of June, about a month ago, was taken with what the doctor called inflammation of the bowels. He was greatly nauseated, but could not vomit. There was some pain in the abdomen. Last Friday noticed a "knob" on the right side of the abdomen close to the ribs. The next morning the lump had increased in size and he felt feverish and had chills. His condition rapidly grew worse, and on Monday afternoon he was brought to the hospital. The patient in appearance was very strong and robust and of great endurance. There was a large tumor in the right side of the abdomen, which, continuous with the liver dullness, extended downward to the crest of the ileum and ended in a broadly rounded margin. The whole right side of the abdomen was occupied by the mass. Toward the left, at the median line, the flatness gradually gave place to normal abdominal resonance. There was a distinct sensation of fluctuation and entire absence of resonance. There was nothing which suggested the peculiar thrill of an hydatid cyst. Over the region occupied by the tumor there was marked tenderness. The temperature was 102°, and pulse 120. There was no pain. All other signs were negative. It was impossible to make a diagnosis in this case. An abscess was not seriously thought of, for the operation was performed in Ward E. An echinococcus cyst was considered, but no diagnosis of such condition was made. It was impossible to eliminate dilated gall-bladder or hydronephrosis. Whatever the cause, it was quite evident from the severity of the symptoms that immediate exploration was imperative. No opportunity was therefore given us for that careful study and observation which obscure abdominal cases require.

¹ Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

The operation, under ether, was performed on Tuesday, August 4th. An incision three inches in length was made in the right flank, over the tumor, parallel with the fibres of the external oblique muscle. On cutting through the peritoneum a tumor presented which was very similar to liver in color and appearance. It was finely mottled, smooth and glistening, tense and fluctuating. The wall of the mass was sutured to the parietal wound with interrupted silk sutures, leaving an oblong space about an inch and a half in length and an inch in width occupied by uncovered tumor wall. At this point an aspirating needle showed the presence of pus. An incision was then made through about a quarter of an inch of normal liver substance until pus was reached. Large quantities escaped through the cut until the opening became clogged with a jelly-like substance, which, on being pulled out, was evidently the daughter cyst of an enormous echinococcus. At least five hundred cysts were removed by irrigation, varying from the size of an English walnut to a pin's head. The cyst was then thoroughly washed out with warm water. A large glass drainage-tube was left in the cavity, packed about with gauze. On the 5th the temperature was 99°. The discharge rapidly diminished under daily irrigation, and he was discharged on October 4th. At the present time he remains perfectly well.

This case shows the importance of early exploration in obscure abdominal cases which are accompanied by more or less severe constitutional disturbance — in all abdominal conditions where the symptoms are urgent and their cause not understood. This cyst was about ready to break into the abdominal cavity, and there was probably already existing a localized peritonitis, though none was discovered. As a safe and efficient method of treating echinococcus cysts encroaching upon the abdominal cavity, the case seems to be one of value, and the treatment may occasionally be imitated in the treatment of abscesses from other causes and in different regions of the abdomen. The appearance of what the patient called the "knob" in his side soon after the attack of inflammation of the bowels, together with its rapid growth, seems to me to indicate that the size of the cyst depended largely upon the accumulation of pus, and that previous to the inflammatory condition the tumor was so small as not to be noticeable.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, March 2, 1892,
Dr. A. T. CABOT, the President, in the chair.

DR. A. K. STONE, reported

BACTERIOLOGICAL AND CLINICAL INVESTIGATIONS INTO THE ACTION OF DERMATOL.

This wound-healing material was produced and first used in the laboratory and clinics of the University of Breslau. It is an odorless, astringent powder, aiding in the healing of fresh wounds and well-granulating surfaces, especially in all cases when primary union is threatened from the presence of much secretion. Its use is indicated wherever iodoform, aristol, or any

inert powder would be used, excepting in such cases as require stimulation; here dermatol not only does not act favorably, but tends to increase the condition. It is also of great value in moist eczemas, etc.

In the bacteriological laboratory it was found that when bacteria were grown in the presence of dermatol, their products entered into chemical combination with the dermatol and were modified; and quantitative experiments showed that the dermatol materially hindered bacterial growth.

DR. C. P. PUTNAM: In reference to dermatol, I have used it in the nostril in nose-bleed. One of the most disagreeable accompaniments of nose-bleed is the foul smell of the blood, which is difficult to remove afterwards without fear of starting the haemorrhage again. In one case I introduced dermatol abundantly on the end of a pad of cotton-wool, which did not cause irritation, and prevented the foul odor.

DR. J. E. GOLDFTHWAITE showed a patient suffering with

CHARCOT'S DISEASE OF BOTH HIP-JOINTS.

There is free play of the femur up and down for four inches, absolutely devoid of pain, and the attitude in standing is characteristic. There is a very marked rub of the two surfaces of the bone together. The reflexes are absent.

DR. WILLIAM W. KEEN, of Philadelphia, presented a paper on

RESECTION OF A LARGE PORTION OF THE LIVER FOR ADENOMA OF THE BILE-DUCTS: RECOVERY.¹

DR. GEORGE W. GAY reported

CASES OF CHOLECYSTOTOMY.²

DR. M. H. RICHARDSON reported cholecystotomy cases, together with

A CASE OF ECHINOCOCCUS CYST OF THE LIVER.³

DR. A. T. CABOT reported

TWO CASES OF CHOLECYSTOTOMY.⁴

DR. WILLIAM W. KEEN, of Philadelphia: There are two or three points which have occurred to me in connection with this subject. To illustrate one I will narrate a case I had recently, in which, if I had been aware of the method of drainage Dr. Richardson has spoken of, I think possibly the result might have been different. A lady came to me who had consulted a number of practitioners in Europe as well as in this country, in consequence of pain in the region of the gall-bladder with intolerable itching all over the body, but with very moderate, in fact, scarcely any jaundice. One might say she was a very sallow woman, but not distinctly jaundiced. Her body was covered with scratch-marks. The symptoms had continued about three years. No relief had followed any treatment. She declared she would rather die than live as she was. The diagnosis was one of probable gall-stones from symptoms and not from physical signs, for there was no gall-bladder, no tumor, nothing of the kind to be found, and no special tenderness in the region of the gall-bladder. I agreed to do an exploratory laparotomy, and it proved to be an excessively difficult one. I adopted, as I always have done in those cases, the

same incision as Dr. Richardson's. As soon as I opened the abdominal cavity, I examined the under surface of the liver, but could not find the gall-bladder. Directly posterior to the incision was a hard mass, evidently more or less agglutinated, in which I presumed that the gall-bladder lay, though it could not be recognized. The diagnosis lay between gall-stone and cancer, probably of the pancreas, and I was very uncertain as to which I had to deal with. However, I tore through the mesentery and came down upon the pancreas, and to my surprise found no cancer of the pancreas at all, but a perfectly normal one; but immediately back of the pancreas still this hard mass was to be felt. Her instructions being that if relief was to be had she wished to have it, I felt justified in searching further, and with my fingers and a pair of haemostatic forceps I bored through the pancreas, and back of it came upon a hard, nodulated mass, which I recognized as one or more gall-stones, presumably the gall-bladder, but lying directly across the spine. On opening this I removed one large and five or six small stones. I inserted a drainage-tube, but unfortunately I did not surround it with the gauze. I had the pleasure of seeing one of the operations. Dr. Richardson has so well described, and I was delighted with his method of drainage, and should have adopted it had I been familiar with it. The patient did very well for several hours; but in the middle of the night was suddenly taken with collapse, and died the next morning at seven o'clock. No post-mortem was allowed me. Only in one other case have I ever found the gall-bladder so entirely displaced. In that case also it lay transversely and immediately in front of the spine, but not behind the pancreas. I was therefore able to reach it readily without passing through any structure.

The cases he has referred to have thrown additional light on a point I raised in the paper I had the honor to read this evening, namely, the question of the escape of bile into the peritoneal cavity. Undoubtedly no glass drain, even if surrounded with gauze, will carry away, either through the tube or through the capillary attraction of the gauze, all of the bile. There must be more or less of it that will escape among the intestines during that period in which tubular drain is being established by agglutination of the intestines around the gauze that is placed outside of the tube. I think, therefore, we have here decidedly confirmatory proof of the fact I have mentioned, that the escape of bile into the peritoneal cavity is not necessarily a fatal occurrence.

Dr. Cabot's speaking of the case in which a number of gall-stones were passed, reminds me of a case of unsuspected gall-stones in an excessively fat woman on whom I did a laparotomy in consequence of pelvic abscesses. I made no examination of gall-bladder, for nothing had ever pointed in that direction. I paid attention exclusively to the conditions found in the pelvis, but after the operation the patient vomited continuously for a week. It was absolutely uncontrollable. Along with it, however, her temperature did not rise; and therefore I came to the conclusion that there must be some complication other than mere ether vomiting, and also that it had not to do with a peritonitis. About a week after the operation she began to pass gall-stones by the bowel. There was a perfect torrent of them for three days, during which time we obtained 101 of them. The vomiting then ceased entirely, and the patient never had a bad symptom afterward.

¹ See page 405 of the Journal.

² See page 411 of the Journal.

³ See page 422 of the Journal.

⁴ See page 416 of the Journal.

DR. ALBERT H. TUTTLE, of Cambridge: Having assisted at the last two operations of the seven successfully treated by Dr. Marcy, I am led to report the same, by the kind permission of that gentleman, on account of certain interesting features in both cases, which demonstrated the rationale of his method of treating this affection, and also show the advantages to be obtained by similar methods over some that have been practised during the last few years.

Mrs. H., aged sixty, when first seen, had been under the treatment of a physician for several days; her condition was critical and she took the ether badly. A tumor with faint outlines was present, just beyond the linea semilunaris, below the margin of the ribs, and an incision about three and one-half inches long was made across its centre, parallel to the border of the ribs and carried through into the abdominal cavity; the edge of the liver and a part of the considerably distended gall-bladder presented in the wound, the latter more or less mottled, with dull, grayish-yellow spots of necrotic tissue. The bladder was drawn well into the wound and stitched to the edge of the peritoneum, care being taken to pass the sutures (kangaroo tendon) only through the outer coat.

Three layers of stitches, passing in the form of a ring about the base of the bladder, were thus taken, and served to completely shut off the peritoneal cavity, a condition especially desired as it was anticipated the sac contained pus. An incision about one inch long was then made into the bladder, which allowed the escape of three or four ounces of slightly yellowish fluid, the modified secretion of the bladder wall, and one gall-stone.

The probe detected the presence of another of very considerable size; this could not be removed through the opening in the bladder wall, and an attempt was made to crush it with a pair of strong forceps, but without success; it was then seized between the points of a pair of tenaculum, or modified bullet-forceps, and broken, when it was easily removed. There was still another stone discovered in the common duct, the cause of the severe symptoms, — constant vomiting, temperature 104° and 105° , small pulse, scanty, high-colored urine, containing bile and albumen, — which was of considerable size, but easily removed.

The first stone removed was lozenge-shape, the diameters were three quarters and one-quarter of an inch, the flattened surfaces faceted; the second and largest was cylindrical in form, about one and three-quarter inches long, and one and one-quarter inch in diameter. One end was faceted.

The third stone removed from the duct was nearly spherical, one inch in diameter, the surface partly smooth, the whole mass weighing two ounces in the condition in which it was taken from the body. The wound was drained and packed with iodoform gauze, and an aseptic dressing applied. This patient made an uneventful recovery, the temperature after the operation never reached 100° , and at the end of four weeks the patient was out, and the wound entirely healed. This, I am informed, was a longer period than any of the other five preceding cases required, most of which healed by primary union.

The second case was Mr. G., aged twenty-nine, and operated upon March 2, 1892. Three years ago he was taken with sharp, colic pains, which confined him in bed for several days; jaundice was marked, urine became dark and the stools clay-colored, although

there was no local tenderness or swelling. There were two subsequent attacks with jaundice; the last, September, 1891, was called inflammation of the bowel, and followed a fall from his bicycle; it confined him to his bed three weeks, during which time he was badly jaundiced, and there was a great deal of soreness and pain over the region of the gall-bladder, but no local enlargement until about January 1, 1892. Since then the tumor has rapidly developed, until at the time of the operation it was about egg size, flattened and circumscribed, with distinct fluctuation in its centre, and firmly adherent to the abdominal wall. The general condition of the patient was fairly good, there was no jaundice, but his weight was from fifteen to twenty pounds below normal. The diagnosis was doubtful.

The tumor had been diagnosed as one of gall-bladder origin, but there was a superficial character about it, which pointed toward an abscess in the abdominal wall, and to help this opinion the tumor was firmly attached to the skin. It was in view of these facts that a straight incision was made through the skin over the centre of the tumor. The skin was thickened, and closely adherent to the parts below, and there was entire absence of muscular tissue.

The wall of the cyst was easily discriminated, and an incision three-quarters of an inch long made into it; some thick pus, containing a few small gall-stones, followed the withdrawal of the knife. Examination showed a contracted gall-bladder, the whole cavity of which was filled with a reticulated meshwork of tissue which was formed, evidently, from the inflamed mucous membrane, and containing strong bands of connective tissue which crossed the cavity in all directions. Firmly held in this web of tissue, were over one hundred stones of variable size, the largest being about three-eighths of an inch in diameter. These were slowly teased from their confinement by means of a dull curette, and the cavity packed with iodoform gauze, and an aseptic dressing applied.

DR. S. J. MIXTER read a paper on

RETENTION-CYST OF THE GALL-BLADDER.³

DR. WHITNEY: As regards the diagnosis of the situation, it was rather by exclusion than anything else. The examination of the wall of the cyst showed it to be of fibrous nature, and the contained fluid was thin, rather viscid, and such as I have seen often in cases where the gall-bladder has been cut off from the bile, and where there has been accumulation of thin, mucus-like fluid within the gall-bladder. There was nothing of the nature of an echinococcus cyst-wall, and from the situation, I think, with Dr. Mixter, there is no other supposition tenable except that it was a retention-cyst of the gall-bladder, the communication with the common duct having been cut off.

DR. M. H. RICHARDSON showed a

RETRO-PERITONEAL CONGENITAL CYST, removed eight days before from a baby of thirteen months, a patient of Dr. Bowers, of Clinton. When born the abdomen was abnormally enlarged, and the child was supposed to have something the matter with the liver. Later, as he developed, the swelling also increased in size. There was no interference with the general health of the baby. A few weeks ago it was decided, in consultation with Dr. F. C. Shattuck,

³ See page 429 of the Journal.

to make an exploratory incision. The diagnosis was necessarily obscure, but it seemed, on the whole, to be more probably a congenital hydrocephrosis than anything else. On opening the abdominal cavity in the median line, above the umbilicus, a large retro-peritoneal tumor was exposed. This contained about seven pounds of slightly opaque fluid. The cyst was attached just behind the pancreas. Over and in front of its neck the splenic vein passed, and it was necessary to tie and cut that vessel. The peritoneum was stripped from the tumor down to its base, and the pedicle ligated with catgut. The diagnosis made by Drs. R. H. Fitz and W. F. Whitney, after examination of the specimen, is retro-peritoneal cyst of congenital origin, and the case is apparently unique. The baby was discharged from the hospital well in about three weeks from the time of the operation.

Dr. WHITNEY: The specimen is quite unique, being a cyst developed behind the pancreas in the retro-peritoneal tissue, and is of interest from its point of origin, as cysts in this region are among the greatest rareties. In the ordinary literature of the subject I find no mention of it; and Dr. Fitz, who recently has given a great deal of attention to diseases of the pancreas tells me he has not come across any mention of a cyst occurring in this region.

As you look at the cyst you see on the upper surface the line where the peritoneum has been dissected off as sort of ridge. In the fresh condition this contained numerous gray, rather lobulated masses which attracted my attention at first, and which I thought to be simply minute masses of fat of the peritoneum. On section, you see that the upper part are really portions of the pancreatic tissue, a sinous gland-tissue. Under the microscope you see denser masses, masses of pancreatic tissue, then the wall of the cyst, which is of fibrous tissue. As regards the fluid which this contained, I am sorry that it was not received in a fresh enough condition to make a very satisfactory examination. From the report of the house-officers who examined it, it contained a certain amount of fatty, degenerated, granular corpuscles and fat crystals and a little free fat. In one point of the cyst wall there is also a little fatty-looking tissue. There is no epithelial lining of the cyst wall, and nitrate of silver staining failed to disclose a distinct endothelial lining, such as usually lines the serous surface of the abdomen. Being of congenital origin, as the history plainly shows, we probably have to do with something of developmental character, and at once attention would be called to the peritoneum as the probable source of origin.

Recent Literature.

A Manual of Hypodermatic Medication: the Treatment of Disease by the Hypodermatic or Subcutaneous Method. By ROBERTS BARTHOLOW, A.M., M.D., LL.D., Emeritus Professor of Materia Medica, General Therapeutics and Hygiene in the Jefferson Medical College of Philadelphia, etc. Fifth edition, revised and enlarged. J. B. Lippincott Company. 1891.

The fifth edition of this work has grown to a book of 540 pages, as many of the articles have been rewritten and new matter has been added.

An interesting historical sketch of the hypodermatic method begins the work. The author uses the term hypodermatic in place of hypodermic, as the term hypodermic is not sanctioned by scholars, but the use of the less exact word is now so firmly established that it will be difficult to substitute the more proper one for it.

Under the group of remedies affecting nutrition, there are given valuable suggestions about the subcutaneous use of mercury, of pilocarpine, of iron, and various methods of transfusion are briefly considered. Then follows a group which is classed as agents having the power to destroy pathogenic micro-organisms, among which are found a number of antiseptics and antipyretics.

A large portion of the work is devoted to morphine, the treatment of the opium habit and the antagonisms between atropine and other alkaloids. Following this, and also among the remedies which affect the nervous system, are strychnine, the digitalis group, cocaine, caffeine and ergot. The subcutaneous use of quinine is, of course, taken up; and the peculiar advantages of the subcutaneous method of administering it is insisted on. Of the remaining topics those of amylydrate, nitroglycerine and apomorphine are among the more important.

Besides a consideration of the subcutaneous use of the remedies, their history, properties and physiological action and uses are given. The work has many suggestions of practical value, but things of secondary importance are also included in a work which aims to be complete.

Dr. Bartholow recommends the hypodermatic use of atropine in asthma. Morphine is treated very fully; and the author takes the ground that it is not as much used as it deserves to be in relieving pain after operations and injuries, especially during the first few hours after fractures or dislocations.

So far as the reviewer is aware, this work is the largest and most comprehensive which has been written on this subject; and the well-known and distinguished author has evidently taken great pains to include all that has a bearing upon the subject of hypodermatic medication.

Therapeutics, its Principles and Practice. By H. C. WOOD, M.D., LL.D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. Eighth edition. J. B. Lippincott Company. 1891.

It is a satisfaction to see the editions of this standard work on therapeutics follow each other at short intervals. Only a few years ago the seventh edition was published; and we now have the eighth edition in a revised and enlarged form.

There is no work on this subject which is more reliable in its teachings. The many familiar excellencies of this valuable book are retained, and it is unsurpassed by any other treatise.

Essentials of Medical Electricity. By D. D. STEWART, M.D., and E. S. LAWRENCE, M.D. 16mo, pp. 158, with sixty-five illustrations. Philadelphia: W. B. Saunders. 1892.

This little manual is better than the average of such compilations. It is clearly written, and affords a fairly safe guide to the beginner in this subject.

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THE REPORT OF THE MEDICAL OFFICER OF
THE LOCAL GOVERNMENT BOARD.

This valuable report contains the results of the investigations of the Local Government Board upon sanitary matters for the year 1890.¹

From this report it appears that the percentage of young children who had not been formally accounted for in the vaccination returns amounted to 10.3 in London, and 8.2 in the rest of the country, a somewhat larger percentage than that of the years immediately preceding. This increase may partly be attributed to the fact that no serious epidemic of small-pox has occurred in England for the past six years. The investigations made by the medical inspectors of the Board during the year comprised an inquiry by Dr. Barry relative to an epidemic of typhoid fever in the valley of the River Tees. The circumstances attending this epidemic are so much like those which recently prevailed at Lowell² and Lawrence on the Merrimack River, as to be worth repeating here for the purpose of comparison. The Tees Valley embraces a district of 746,000 acres, with an estimated population in 1890 of 520,000, the principal towns being Middlesbrough, Darlington, Stockton and Auckland. In the district there were 570 cases of enteric fever reported in the four weeks ending with October 4th. After describing the conditions which prevailed in the district, during the previous season, Dr. Barry concludes as follows:

"From a consideration of all the circumstances of the case, I have personally no hesitation in attributing the epidemic of enteric fever in the lower Tees Valley to the water pumped from the River Tees during the fortnight ending August 23d, at a time, namely, when the river was in flood, and when it must have contained abundance of excremental ma-

¹Twentieth Annual Report of the Local Government Board (1890-1891). Supplement containing the Report of the Medical Officer. Pp. xi, 296. London: Eyre & Spottiswoode, 1891.

²Journal, vol. xxiv, p. 397.

ter. And I consider that, so long as water for drinking purposes is drawn from the Tees, the condition of that river remaining as at present, so long will there be danger of the occurrence of similar epidemics to that described in this report, in the districts thus supplied with Tees water.

"There can be no question that if the sewage and excremental and other refuse of the various towns and villages above the pumping station were prevented from passing into the Tees, the danger of specific pollution of the water would be very greatly reduced; but even under these circumstances it is still doubtful whether a water, pumped from a river at a point forty miles from its source is, anywhere in this country, a desirable supply for drinking purposes.

"Until some very decided improvement is effected, either in the river conditions or in the source of the water-supply, it will be advisable for persons residing in the towns recently infected by enteric fever, to boil all water prior to its use for drinking purposes."

Other important investigations follow upon epidemics of diphtheria, scarlet-fever, cerebro-spinal meningitis, and pneumonia in different districts of England and Wales.

Dr. Parsons contributes a valuable inquiry as to the merits and demerits of water-closet construction, with special reference to the use of slop-closets and trough-closets. He is of the opinion that the slop-closet with automatic flushing is well-adapted for use at artisan's cottages, and that trough-closets might be introduced with advantage in common courts occupied by the lowest and roughest class of people, as well as at schools, mills, and other places where closets are used in common by large classes of people. Neither professes to be adapted for indoor use. One has for its object the economizing of rain and sink-water, where water is scarce; and the other, the prevention of injury to health by the misuse of water-closets. This advice would be better adapted for New England, if it were not for the liability of all outdoor fixtures to freeze during our rigorous winter weather.

Dr. Bullard contributes a summary of all the cases of food-poisoning which had been investigated by the Board during the previous twelve years, fourteen in number. Most of these resulted from eating pork, pork-pies, or tinned meats in some form or other. He describes the usual symptoms as follows:

"A person after eating the poisonous food, often and indeed usually without previous warning, is suddenly attacked by the initial symptoms, which may be rigors, or one or other of the following symptoms, faintness, muscular weakness and prostration, sometimes very severe, or giddiness, abdominal pain, vomiting and diarrhoea, followed by fever, thirst, and more or less violent headache, and pains in various parts, and a variety of nervous disturbances such as muscular twitchings, disturbances of vision, dilatation of the pupil, or drowsiness; there may be an eruption of the skin, and later on suppression of urine. Convalescence is apt to be prolonged and sometimes attended with desquamation of cuticle.

"Pathological conditions noticed after death in men and animals consist of inflammatory, hemorrhagic or destructive changes in the stomach and intestines, pneumonic engorgement or a hemorrhagic condition of the lung tissue, and inflammatory or destructive changes in the liver and kidneys. These are phenomena not of mere local irritation, but of a general disease. Both clinically and pathologically, therefore, the phenomena resemble those of our better-understood specific fevers, with which this form of malady must in future be classed."

In the special appendices at the close of the volume may be found a continuation of Dr. Klein's researches upon the etiology of diphtheria, in which he reaffirms, notwithstanding the doubts of Löffler, his statements relative to the inoculation of cats and cows with the bacillus of diphtheria.

Dr. Martin contributes a paper on the "Chemical Pathology of Anthrax"; Dr. Hamer presents a report on "Certain Conditions Determining Insusceptibility"; and Dr. Andrewes, a paper on "Pyogenic Organisms."

The report contains a memorandum which has much practical importance in connection with the management and control of infectious diseases. The subject included in the memorandum is, "The Circumstances under which the Closing of Public Elementary Schools or the Exclusion therefrom of Particular Children may be Required in order to Prevent the Spread of Disease."

THE HOSPITAL SATURDAY AND SUNDAY ASSOCIATION.

A MEETING of the New York Saturday and Sunday Association was held April 18th, at St. Luke's Hospital, to consider the annual report of collections for 1891. The report showed that the Association now embraces thirty-three hospitals. There are one hundred and fifty contributing churches, chapels and synagogues, while effective organizations for trade collections exist in all the principal business exchanges and trades of the city. During the last year a new impetus has been given to the work through the zeal and co-operation of women, who, through their Woman's Auxiliary, collected \$7,422.84 for the fund. The annual collection for the hospitals in New York amounted this year to \$60,263.91, which is \$1,921.68 more than that of last year.

The work of the Association has grown to such magnitude that a general agent has been permanently employed to foster interest and prepare the machinery for the annual collection, and to act as an intermediary between contributors and the hospitals with regard to the admission of patients.

Similar associations have been formed in some of the other cities of the country, and it is thought that the growth of interest in the cause may lead to the establishment of a National Hospital Saturday and Sunday Association. A committee that had been appointed in regard to awakening a more general interest

in the movement made a report, and it was decided to issue a circular letter, setting forth the objects of the Association, and the work accomplished by it in New York, and to send this to persons interested in philanthropic work in the various cities and large towns of the country.

SURGERY OF THE LIVER.

The present issue of the JOURNAL may be fairly termed an hepatic number. It opens with a paper by Dr. W. W. Keen, of Philadelphia, on resection of the liver, especially for hepatic tumors, which includes a report of a successful resection for a very rare cystic adenoma of the bile-ducts. This is followed by a paper by Dr. M. H. Richardson, of Boston, on gall-bladder surgery, illustrated by eleven different cases, and in addition he reports an echinococcus cyst of the liver. Dr. Homer Gage, of Worcester, Mass., contributes a case of secondary laparotomy for pistol-wound of the liver; Drs. Gay and Cabot, of Boston, cases of cholecystotomy; Dr. Irish, of Lowell, cases of hepatic abscess; and Dr. S. J. Mixter, of Boston, a retention-cyst of the liver.

This is an uncommon collection of cases presented by able surgeons, especially when one reflects how very recent the development of hepatic surgery is. We shall do no more, and we could do no less, than direct the attention of our readers to this interesting series, which we are fortunate enough to be able to lay before them simultaneously, and to the report of the Society before which it was presented.

The surgeon and the physician are prying into the liver as never before; hepatic tissues and processes which not long ago were dreadful and mysterious are rapidly becoming less so or ceasing to be so at all. Editorially we have had our say, not long ago, on the surgery of the liver,¹ and very recently on biliary infections,² and gladly leave the reader, without further comment on our part, in the good company in which he finds himself to-day.

MEDICAL NOTES.

THE PADDOCK PURE FOOD BILL. — This bill, the details of which were given on page 276 of the JOURNAL of March 17th, is now before the national house of representatives, and is being opposed by manufacturers of proprietary medicines, on the ground that it places undue restrictions upon an important and flourishing industry.

PHYSICIANS UNDER FIRE. — While two physicians in Brooklyn were endeavoring last week to have a child with small-pox removed to the hospital for contagious diseases at Flatbush the irate father of the child, in a fit of passion, fired two shots from a revolver at them. Fortunately no harm was done, and after the arrival of the police captain and several assistants, the

¹ November 19, 1891, p. 554.

² April 14 and 21, 1892, pp. 373, 387.

child went to the hospital and the father to the station-house.

MEDICAL DEGREES IN FRANCE.—During the academic year 1890-91, the number of persons admitted to the degree of Doctor of Medicine in all the French Faculties was 594, being three less than in the previous year. Of these degrees, Paris conferred 374, Lyons 71, Montpellier 60, Bordeaux 55, Lille 14, Nancy 11, and the newly-created faculty of Toulouse nine.

A MURDERER'S DEVOTION TO SCIENCE.—It is said that a French murderer, condemned to be guillotined, recently requested his brother, a medical student, to experiment with his head immediately after decapitation, in order to ascertain by a pre-arranged code of signals (winks and movements of the eye-balls), what he felt when the knife cut his head off, and how sensation and consciousness is retained.

THE SO-CALLED "PARROT EPIDEMIC" IN PARIS.—The Paris correspondent of the *British Medical Journal* notes the breaking out of a new epidemic of a hitherto unknown malady, which is supposed to have been transmitted by some parrots imported from Brazil. Professor Peter, of the Hôpital Necker, believes that it is often transmitted directly from the birds to the human subject than caught by one patient from another. One of the cases has come to autopsy. Professor Cornil says: "It is a new disease; this is the first time I have met with it." In this connection it is interesting to note that yellow fever is prevalent in Brazil.

FOOTBALL IN ENGLAND.—During the season in which the game of football is played in England, the record of accidents more or less serious, is practically continuous; and although many organs of public opinion from time to time contain articles remonstrating against the amount of injury suffered through the violence of the play indulged in at ordinary matches, still the frightful extent of it is not probably very generally realized. How widespread is the mischief, however, is forcibly brought out when the fatalities and injuries which occur within a single season are collected together and arrayed in a tabular fashion, as has recently been done in the pages of the *Pall Mall Gazette*. The result here shown is that during the football season of 1891-92 there died through accidents received on the field no fewer than eleven players, while more than seventy others received injuries, mostly in the shape of fractures, which would entail on them weeks of suffering and incapacity for work. The time has surely come when an attempt ought to be made in favor of arresting the annual tribute of lives to the craze for dangerous excitement, to which alone it is possible to attribute the popularity of the game.

BOSTON AND NEW ENGLAND.

THE WEST-END NURSERY AND INFANTS' HOSPITAL.—The directors of the West-End Nursery and Infants' Hospital, while acknowledging the receipt of generous contributions, regret that they must appeal to the pub-

lic again for aid in order that the work may be continued in its present manner until June 1st, and that arrangements may be made for caring for a number of babies during the summer months.

MASSACHUSETTS EMERGENCY AND HYGIENE ASSOCIATION.—The annual meeting was held April 21st at the house of Dr. Francis Minot. Mrs. Kate Ganett Wells read the report of the executive committee, Dr. O. H. Marion that of the militia work, and Miss Tower of the children's playgrounds. The financial statement showed that the association had not gone into debt, but that the public should be appealed to in aid of the funds to carry on the philanthropic work.

CASES OF TRICHINOSIS IN ROXBURY.—Cases of trichinosis have been recently reported in Roxbury (Boston). There were eight or ten cases in all, and one death. All the cases apparently originated from the ham of a four-year-old pig, brought up in the neighborhood. The meat was eaten uncooked, and the cases occurred in four families, all Germans from Saxony. Trichines were found in the ham and in the muscles of the man who died. Trichinosis has been very rare in or about Boston for many years.

CHILDREN'S ISLAND SANITARIUM.—The annual meeting of the Children's Island Sanitarium was held April 21st at the office of the treasurer. By the reports presented it appeared that 430 persons were admitted to the benefits of the institution last summer, and \$4,876 was expended in carrying on the work. With the exception of George Hayward, M.D., whose resignation was received and accepted with much regret, the old board of officers was re-elected as follows: President, C. E. Inches, M.D.; Treasurer, J. O. Shaw, Jr.; Secretary and Medical Superintendent, H. C. Haven, M.D.

NEWTON (MASS.) HOSPITAL AID ASSOCIATION.—A fund has been started by the Newton Hospital Aid Association, to establish what is to be known as the Palmer Memorial Home for Nurses in connection with the Cottage Hospital of Newton. The plan is to erect a suitable building with at least ten dormitories for the pupil nurses, and a large sitting and recreation room. It is to be named in honor of Miss Palmer, the former matron of the Cottage Hospital and the founder of the training-school.

NEW YORK.

CHANGES IN THE BOARD OF HEALTH.—A number of changes among the medical officers of the Board of Health were ordered at the meeting of the Board held April 19th. Dr. W. A. Ewing, who has been Sanitary Superintendent for three years, was discharged, and Dr. Cyrus Edson appointed in his place. Dr. Charles F. Roberts was promoted to the position of Chief Inspector of Contagious Diseases vacated by Dr. Edson. Dr. John T. Nagle was promoted to the position of Registrar of Records, and Dr. Roger F. Tracy, who had previously been Registrar, was given the position of Deputy Registrar, hitherto occupied by Dr. Nagle. Dr. F. R. Percival

was discharged from the post of resident physician at the hospital for contagious diseases on North Brother Island.

TIYPHUS FEVER AND SMALL-POX.—During the past week two or three new cases of typhus fever were reported. There were two deaths from small-pox, and a large number of new cases of the disease, as many as six being sometimes reported in one day. During the past month there have been more cases of small-pox in the city than for several years past, but the disease is apparently of a mild type, the mortality having been very small.

YELLOW FEVER.—The steamer *Alliance*, which arrived at quarantine from Brazilian ports on April 22d, had a number of cases of yellow fever on board before she finally left Brazil. One of the patients, a young man belonging to a wealthy New York family, who contracted the disease at Santos, died on the vessel. Two of the ship's crew were sent on shore at Santos, and six at Rio Janeiro, suffering with the fever.

Miscellan.

THE FIFTY-NINTH YEAR OF THE BOSTON LYING-IN HOSPITAL.

THIS admirable hospital has issued a handsome report for the year 1891, which includes a statement of its history, work, officers, staff, board of lady visitors and corporate members, the names of donors, statistics of its physicians, finances, and of its training-school for nurses.

It has judiciously provided itself with all the modern appendages for the successful working of a modern charitable institution.

The Boston Lying-in Hospital was originally established by the co-operation of the Massachusetts Humane Society and the Charitable Fire Society. What the hospital now is and what it does, cannot be better told than in the words of this report:

"During the past twenty years it has in various ways performed an important service to the city of Boston and to the larger community whose welfare it affects.

"The work which the institution accomplishes in caring for more than five hundred women annually in the hospital, and in extending its aid each year to more than seven hundred women in their own homes, fills a vital need, and at the same time relieves the public institutions of the city from the practice of a charity which can be far more effectively and properly exercised by private benevolence; but this is not the only and perhaps not the most valuable benefit which the hospital confers. It is only by a large hospital, where many and difficult cases are treated, and where the treatment is carried on systematically and under constant observation and record, that scientific advancement can be made, new discoveries achieved, and improved methods inaugurated.

"The Boston Lying-in Hospital has taken a leading place among the institutions of its kind; and the results which have been here attained have been

quoted both in this country and Europe, and have helped to form the basis upon which the wonderful progress in obstetrics has been founded. Considered in the light of the dangers and fatalities which in the immediate past have attended women at this critical period, it is a triumph of science and skill, as remarkable as it is gratifying, that of a thousand patients — many brought because of their exceptional difficulty and from exceptionally adverse circumstances — not a single death should occur fairly ascribable to child-birth. Such a fact appeals to every family; and it is owing to the work done in this and similar maternity hospitals that such facts are made possible.

"The hospital is not only thus adding to general medical knowledge and skill, but is at the same time doing a more immediately practical work for this community. Its wards make possible for medical students a clinical instruction which is invaluable, and indeed almost indispensable, to the young physician. Through its out-patient department more than a hundred student externes are annually afforded, under the hospital oversight, a practical experience in the homes of the poor, which inures to the benefit alike of practitioner and patient. Each year half-a-dozen young physicians, after four months' service, go from the hospital into active work with a knowledge and skill which physicians ordinarily are unable to gain by a lifetime of practice in obstetrics; and each year the hospital's training-school graduates nearly a score of nurses thoroughly equipped and instructed in the best methods for securing the care, comfort and safety of private patients. The hospital is, therefore, more than a charity, and there is no class to which its important benefits are limited."

The buildings have lately been much enlarged and extended; and, in order to properly accomplish its beneficent work in accordance with these increased facilities, the list of generous donors should also be greatly increased, as it undoubtedly easily will be, since the benefits which such a hospital confers upon a community are so patent.

THE LANGENBECKHAUS AT BERLIN.

PROF. ERNST VON BERGMANN has presented a report to the German Emperor in which he gives an interesting account of the foundation and progress towards completion of the Langenbeckhaus at Berlin. This institution, which is intended for the accommodation of the medical societies of the Prussian capital, owes its origin to a suggestion made by the late Empress Augusta, as far back as in 1878, while the seventh congress of German surgeons was in session. Von Langenbeck announced that such a building was in contemplation. It was not, however, till after his death that the proposal took practical shape, and the German Surgical Society and the Berlin Medical Society undertook to carry the suggestion into effect by making the institution a memorial to that surgeon. A committee was formed which set to work without delay collecting funds. At the head of the list of subscribers figure the names of the Empress Augusta, the Emperor Frederick, and the present Emperor, the latter giving 100,000 marks (£5,000). German practitioners in America contributed £500, Russian military surgeons £100. The profession in Germany also subscribed largely. The site is in the Ziegelstrasse,

close to the Royal Surgical Clinic, which was so long the scene of von Langenbeck's labors and triumphs. The building, which is now all but completed, is both architecturally imposing and excellently adapted for its purpose. It provides ample accommodation for meetings of several societies or for the different sections of a congress simultaneously. The largest room can seat 800 persons, and there are four others of somewhat smaller size, besides one, seating 100 persons, for smaller assemblies, one for microscopic and other demonstrations, a room for preparations, and two to be used as a library and reading-room.

INFLUENZA AT SEA AGAIN.

THE following note is of interest inasmuch as it adds another to the list of outbreaks occurring on shipboard, and like some of the other reported instances seems to show that something different from the mere association with people ill with influenza is in some instances responsible for an epidemic outbreak.

Dr. D. G. MacGowan, of Los Angeles, in a paper read before the Los Angeles County Medical Association on March 18th, in speaking of a recent trip to Japan, says: "We left San Francisco with every one well, excepting the doctor. Five days out every one on board was sneezing, and upon the sixth day nearly all of the white crew had well-developed attacks of influenza, which affected chiefly the nervous and respiratory systems. In about a week or ten days we suddenly seemed to sail out of the influenza belt, and every one rapidly recovered."

Such notes are of scientific value as an aid to the study of the etiology of the affection; and it is a pity that such observations are not more frequently reported in the medical journals.

PASSAGE OF TUBERCLE BACILLUS FROM THE MOTHER TO THE FETUS.

BIRCH-HIRSCHFELD AND SCHMAL¹ have recorded a case which they consider is the first in which it has been definitely shown that in the human subject tubercle bacilli can pass from the mother to the fetus. The patient was a young woman who, shortly after the commencement of her first pregnancy, began to exhibit symptoms of incipient phthisis; the disease assumed an acute form, and progressed so rapidly that the patient died during the seventh months of her pregnancy. Immediately after the death of the mother the child was removed by the operation of Cesarean section. A post-mortem examination was made on the body of the mother. Advanced tubercular changes were found in the lungs, and also some miliary tubercles in the liver and other organs. The child had been felt to move after the death of the mother, but by the time the operation had been performed it was found to be dead. The thorax was at once opened, but the lungs appeared to be quite healthy. The body was then removed to the laboratory, the surface of the abdomen washed with perchloride of mercury, and the cavity opened by means of sterilized knives. No evidences of tubercle could be found in any of the organs. Small pieces of the liver, spleen, and kidney were removed with steril-

ized instruments, and placed in the abdominal cavity of two guinea-pigs and a rabbit. One of the guinea-pigs died in fourteen days; miliary tubercles were found in the peritoneum and large omentum. The second one was killed about six weeks after inoculation, and the same appearances were noted. The animal had appeared ill, it was feverish, and emaciating rapidly. The rabbit lived considerably longer — three months; after death tubercles were found in the liver and lung. From these experiments it was evident that although no tubercular lesions could be found in the organs of the child, yet the latter were capable of infecting animals; and had the child survived, it would have undoubtedly developed tuberculosis at an early age. It is a point of great interest to read that tubercle bacilli were found in the umbilical cord and in the blood of the umbilical vein.

THERAPEUTIC NOTES.

STRICHNINE FOR SNAKE-BITE. — During the past year the *Australasian Medical Gazette* has been collecting evidence of the value of strichnine in snake-bite. This treatment, first suggested by Mueller, in Australia, consists in injecting subcutaneously liquor strichninae, B. P., in large doses, until symptoms of the action of strichninae appear. Persons suffering from snake-bite appear to be very tolerant of the drug, the total dosage sometimes reaching as much as a grain. The opinion is expressed that ammonia and alcohol are frequently, if not always, prejudicial in snake-bite poisoning.

THE ADMINISTRATION OF BROMOFORM. — Bedford² calls attention to the improper method in which bromoform is often prescribed, that is, in a mixture of alcohol, syrup and water. In this manner the bromoform is precipitated, and most of the drug may be taken in the last doses. The following formula is suggested:

Bromofom	:	:	:	:	:	m. vi.
Alcohol	:	:	:	:	:	150 c.c.
Glycerine	:	:	:	:	:	15 c.c.
Compound tincture of cardamom	:	:	:	:	:	3 v. s. M.

Each fluid drachm contains one minim of the bromoform in perfect solution. Syrup or water should not be used, as either will reduce the bromoform.

PRESCRIBING OF PEPSIN.³ — Dr. R. G. Eccles, in a paper recently read before the Chemical Section of the Brooklyn Institute, stated that one-half of all the prescriptions which came to the drug stores containing pepsin also contained an alkali, thus destroying the efficacy of the pepsin.

PALATABLE CASTOR OIL. — As the result of a series of experiments, Staadke⁴ believes that he has succeeded in removing the nauseous taste of castor oil. The best castor oil is repeatedly treated with hot water, then sweetened with sufficient saccharin to possess a syrupy taste. Minute quantities of the aldehyde of cinnamon oil and of vanilla flavoring suffice to completely cover whatever disagreeableness of taste remains. Oil so prepared has been found to be as efficacious and permanent as the ordinary oil.

¹ *Pharmaceutical Record*, February 11th.

² *Brooklyn Medical Journal*.

³ *Deutsche med. Woch.*, 1892, No. 4, p. 87.

⁴ *Beiträge zur Path. Anatomie und zur Allg. Path.*, 1891, p. 429.

THE SODIO-SALICYLATE OF THEOBROMINE, OR DIURETIN. — Dr. H. A. Hale⁴ reports his experience with this drug: Encouraged by the favorable results obtained by Keyes and Babcock in this country, by Gram and Hoffmann in Germany, and by Koritschoner in Vienna, he gave 120 grains daily, in divided doses, to four patients, — two of them with cardiac disease, one with general anasarca, and one with senile enlargement of the prostate. In these cases he failed to find any increase in the daily urinary flow — which could be justly attributed to the action of the diuretin. In one the urine did increase somewhat in amount; but he considered this due to the digitalis which it became necessary to administer. The diuretin (Knoll) and the sodio-salicylate of theobromine (Merck) were both employed, and no difference in result was noted. There is, however, a difference in the price of the two; diuretin (Knoll) costs two dollars and fifty cents an ounce, but sodio-salicylate of theobromine (Merck) costs fifty cents an ounce, or one-fifth as much.

Correspondence.

INTERNATIONAL PERIODICAL CONGRESS OF GYNAECOLOGY AND OBSTETRICS.

FIRST SESSION.—BRUSSELS, BELGIUM, SEPTEMBER 14 to 19, 1892.

CHICAGO, April 21, 1892.

MR. EDITOR:—The following named distinguished gentlemen have been delegated to represent the British Gynaecological Society at the International Congress of Gynecology and Obstetrics, next September: Robert Barnes, A. S. Simpson, Granville Bantock and Lawson Tait.

Great preparations are being made to entertain visiting physicians. His Majesty, King Leopold, will assist at the opening of the Congress. There will be a grand reception by the Belgian Gynaecological Society; gala performance at the Grand Opera; also a banquet by the Belgian Gynaecological Society; garden-party in the gardens of the royal family, etc.

For all information relating to the Congress, address,

DR. F. HENROTIN, American Secretary,
353 LA SALLE AVE., CHICAGO, ILL.

* Therapeutic Gazette, March 15th.

METEOROLOGICAL RECORD.

For the week ending April 16, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Baro-meter	Thermometer	Relative humidity	Direction of wind	Velocity of wind	Weath'r.	Rainfall in inches.				
Data.	Daily mean	Daily max.	Minim.	8 A.M.	8 A.M.	8 A.M.	8 A.M.	8 A.M.	8 A.M.	8 A.M.
S. 10	29.55	29.48	29.33	W.	W.	25	18	G.	G.	
M. 11	29.56	29.49	29.35	50	54	W.	W.	W.	W.	
T. 12	30.00	28.47	29.30	37	39	N.	W.	N.W.	N.W.	
W. 13	30.02	43.55	31	52	47	N.W.	N.	16	21	C.
T. 14	29.98	43.54	33	37	40	N.W.	S.	16	6	O.
F. 15	29.67	41	44	55	51	N.E.	S.	20	6	O.
S. 16	28.79	44	52	50	45	N.W.	W.	12	0	F.
EP	28.84	41	49	33	44	44	44	19	14	

* O, cloudy; C, clear; f, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow. † Indicates trace of rainfall. M—Mean for week.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, APRIL 16, 1892.

Cities.	Estimated population for 1890.	Reported deaths	Reported in scot.	Deaths under five years.	Percentage of deaths from				
					Infectious diseases.	Acute lung disease.	Scarlet fever.	Diarrhoeal diseases.	Diphtheria and pneumonia.
New York . . .	1,515,361	937	370	18,48	22.22	2.37	1.65	7.04	
Chicago . . .	1,099,850	452	150	14,30	15.82	1.76	1.26	6.82	
Philadelphia . .	1,080,000	450	150	13,20	14.50	1.33	1.20	6.00	
Brooklyn . . .	568,343	256	111	12,56	15.96	3.32	4.44	4.49	
St. Louis . . .	451,770	163	65	12,42	9.76	.61	4.27	3.96	
Boston . . .	848,477	210	65	12,96	18.72	1.32	.96	6.80	
Baltimore . . .	434,439	140	50	12,00	—	—	—	—	
Portland . . .	282,000	95	30	8,45	14.70	—	—	—	4.26
New Orleans . .	242,039	—	—	—	—	—	—	—	
Pittsburg . . .	240,000	115	53	14,79	13.92	3.48	—	2.61	
Milwaukee . . .	240,000	88	39	15,24	7.98	1.13	1.14	15.96	
Washington . .	120,000	120	50	19,44	16.67	1.62	—	—	
Nashville . . .	75,168	29	6	6,50	22.31	—	3.45	—	
Charleston . . .	62,165	46	10	6,51	4.34	—	4.34	—	
Portland . . .	36,425	12	0	—	—	—	—	—	
Worcester . . .	84,635	32	14	12,53	12.53	—	—	6.26	
Lowell . . .	71,451	14	6	11,40	24.29	—	—	—	
Fall River . . .	74,308	28	10	10,71	28.54	—	7.14	3.41	
Cambridge . . .	70,628	26	10	15,40	11.23	—	3.85	1.70	
Lynn . . .	55,127	24	4	—	45.76	—	—	—	
Lawrence . . .	44,654	27	12	22,20	18.50	7.40	—	—	
Springfield . . .	44,119	12	6	—	—	—	—	—	
New Bedford . .	40,523	12	6	8,33	8.33	—	—	—	
Salem . . .	30,801	13	2	—	—	—	—	—	
Chelsea . . .	27,369	8	0	25,00	25,00	25.00	—	—	
Haverhill . . .	27,412	14	6	7,14	7.14	—	—	—	
Gloucester . . .	25,445	—	—	—	—	—	—	—	
Newton . . .	24,511	7	1	—	26.56	—	—	—	
Newton . . .	24,379	7	1	28.56	42.84	—	14.28	—	
Malden . . .	23,031	14	3	—	14.28	—	—	—	
Fitchburg . . .	22,637	5	1	—	20.00	—	—	—	
Waltham . . .	18,707	7	1	14.28	22.22	—	—	—	
Providence . . .	17,181	10	2	—	40.00	—	—	—	
Quincy . . .	15,723	5	1	—	40.00	—	—	—	
Northampton . . .	14,900	5	2	20.00	20.00	—	—	20.00	
Newburyport . . .	13,947	7	0	—	14.28	—	—	—	
Medford . . .	11,675	2	0	—	—	—	—	—	
Hyde Park . . .	10,120	2	0	—	—	—	—	—	
Peabody . . .	10,158	4	0	—	25.00	—	—	—	

Deaths reported 3,431: under five years of age 1,235; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 438; acute lung diseases 387; consumption 373; diphtheria and croup 162; measles 156; small-pox 10; erysipelas 9; typhoid fever 41; cerebro-spinal meningitis 17; erysipelas 17; whooping-cough 16; malarial fever 7; puerperal fever 5; small-pox 1.

From typhoid fever Chicago 11, Pittsburgh and Washington 6 each; Philadelphia 5, Brooklyn and Boston 2 each; St. Louis, Cleveland, Lowell, New Bedford and Waltham 1 each. From measles New York 27, Philadelphia 5, Chicago 3, Brooklyn and Cleveland 2 each; Boston, Pittsburgh and Lawrence 1 each. From cerebro-spinal meningitis New York 7, Chicago and Lawrence 3 each; Worcester 2, Brooklyn and Cleveland 1 each. From erysipelas New York and St. Louis 4 each; Chicago 3, Philadelphia and Boston 2 each; Brooklyn and Cambridge 1 each. From whooping-cough New York 1, Pittsburgh 2, Chicago, Philadelphia and Cleveland; Nashville, Charlton and Haverhill 1 each. From malarial fever New York 4, Brooklyn 2, Philadelphia 1. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,183,736, for the week ending April 24, the death-rate was 22.2. Deaths reported 4,346: acute diseases of the respiratory organs (London) 430; whooping-cough 170; measles 134; diarrhea 42; scarlet fever 33; diphtheria 30; fever 16; small-pox (London) 2.

The death-rates ranged from 14.7 in Croydon to 28.1 in Manchester; Birmingham 21.9, Bolton 26.0, Bristol 23.2, Hull 18.8, Leeds 24.6, Leicester 21.8, Liverpool 25.0, London 21.4, Nottingham 23.2, Oldham 24.5, Sheffield 20.7, Sunderland 22.8, Wolverhampton 26.2.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING APRIL 16, 1892.

BAILHACHE, P. H., surgeon. Granted leave of absence for seven days. March 3, 1892.

BUXTON, GEORGE, surgeon. Detailed as chairman of Board for physical examination of officers, Revenue Marine Service. March 30, 1892.

GODFREY, JOHN, surgeon. Detailed as inspector of immigrants, port of New York. April 15, 1892.

HAMILTON, J. B., surgeon. Detailed as chairman of Board for physical examination of surfman, Life-Saving Service. March 31, 1892.

MEAD, F. W., surgeon. Detailed as chairman of Board for physical examination of officers of Revenue Marine Service. April 16, 1892.

BANKS, C. E., passed assistant surgeon. Ordered to examination for promotion. April 14, 1892.

CARMICHAEL, D. A., passed assistant surgeon. When relieved at Port Townsend, Wash., to proceed to San Francisco Quarantine for duty. April 8, 1892.

MCINTOSH, W. P., passed assistant surgeon. When relieved at San Francisco Quarantine to proceed to New Orleans, La., for duty. April 8, 1892.

PETTUS, W. J., passed assistant surgeon. Granted leave of absence for thirty days. April 12, 1892.

MAGRUDER, G. M., passed assistant surgeon. When relieved at Portland, Oregon, to proceed to Port Townsend, Wash., for duty. April 8, 1892.

KINTYOUN, J. J., passed assistant surgeon. Detailed as chairman of Board for physical examination of candidates and officers, Revenue Marine Service. March 30, 1892. Detailed as recorder of Board for physical examination of officers, Revenue Marine Service. April 16, 1892.

VAUGHAN, G. F., passed assistant surgeon. Detailed as recorder of Board for physical examination of candidates and officers, Revenue Marine Service. March 30, 1892.

GEDDINGS, H. D., assistant surgeon. Ordered to examination for promotion. March 29, 1892.

WERTHBAKER, C. F., assistant surgeon. Detailed as recorder of Board for physical examination of surfman, Life-Saving Service. March 31, 1892. Ordered to examination for promotion. April 5, 1892.

PERRY, J. C., assistant surgeon. To proceed to Gulf Quarantine for temporary duty. April 9, 1892.

YOUNG, G. B., assistant surgeon. When relieved at St. Louis, Mo., to proceed to Portland, Oregon, for duty. April 8, 1892.

STIMPSON, W. G., assistant surgeon. Detailed as recorder of Board for physical examination of officers, Revenue Marine Service. March 30, 1892.

BROWN, B. W., assistant surgeon. Detailed as chairman of Board for physical examination of officers, Revenue Marine Service. April 1, 1892. To proceed to Port Townsend, Wash., for temporary duty. April 8, 1892.

ROSENAN, M. J., assistant surgeon. When relieved at New Orleans, La., to proceed to St. Louis, Mo., for duty. April 8, 1892.

COFFEE, L. E., assistant surgeon. To proceed to Buffalo, N. Y., for temporary duty. April 8, 1892.

EAGER, J. M., assistant surgeon. To proceed to Gallipolis, Ohio, for temporary duty. April 8, 1892.

GARDNER, C. H., assistant surgeon. To proceed to San Francisco, Cal., for temporary duty. April 8, 1892.

AMERICAN PEDIATRIC SOCIETY.

PRELIMINARY PROGRAMME.

The American Pediatric Society will hold its fourth annual meeting in Boston, Mass., May 2, 3, and 4, 1892. The Sessions will be held in the Boston Medical Library Association Building, 19 Boylston Place.

MONDAY, MAY 2.

First Session (2 p. m.). — 1. The President's Annual Address. By William Osler, M.D., of Baltimore, Md. 2. "Experiments as to the Value of Nascent Ozone in certain Forms of Diseases of Children, with Demonstration of an Efficient Generator." Augustus Callie, M.D., New York City. 3. "Manifestations of La Grippe in Children." Chas. Warrington Earle, M.D., Chicago, Ill. 4. "An Epidemic of Alopecia in a School of Girls," Chas. P. Putnam, M.D., Boston, Mass.

TUESDAY, MAY 3.

Morning Session (10 a. m.). — 1. Discussion arranged by the Council on "The Relations of Rheumatism and Chorea." W. C. Townsend, M.D., Boston, Mass. M. Alice Starr, M.D., New York City. Samuel S. Adams, M.D., Washington, D. C. 2. "Nomenclature of Diseases of the Mouth." T. M. Rotch, M.D., Boston, Mass. 3. Report of the Committee on Nomenclature of Stomatitis. 4. "Pseudo-Diphtheritic Processes." W. D. Booker, M.D., Baltimore, Md. 5. "Treatment of Diphtheria by Sublimation of Mercury." Dillon Brown, M.D., New York City.

Afternoon Session (3 p. m.). — 1. "Typhoid Fever in Children under Two Years," W. P. Northrup, M.D., New York City. 2. "Typhoid Fever in Children," Chas. Warrington Earle, M.D., Chicago, Ill. 3. "Typhoid Fever in Infancy," W. S. Christopher, M.D., Chicago, Ill. 4. "Acute Emphysema in

Children, with Report of Cases," F. Forchheimer, M.D., Cincinnati, O. 5. "Pre-tubercular Anæmia," B. K. Bachford, M.D., Newport, Ky.

Evening Session (8 p. m.). — 1. Business Meeting at the residence of Dr. T. M. Rotch, No. 197 Commonwealth Avenue. 2. Report of the Council and election of officers.

Reception (9 p. m.). of the members of the American Pediatric Society, to be given by Dr. T. M. Rotch at his residence.

WEDNESDAY, MAY 4.

Morning Session (10 a. m.). — 1. "Prevention versus Medication in the Management of Diseases of Children." J. N. Love, M.D., St. Louis, Mo. 2. "Syphilitic Broncho-Stenosis," A. Seibert, M.D., New York City. 3. "A Simple Method for Clinical Examination of Breast Milk," L. Emmet Holt, M.D., New York City. 4. "Sacro-Coccygeal Tumor in a Child Three Weeks Old; Operation; Recovery," F. Huber, M.D., New York City. 5. (Title to be announced.) Henry Koplik, M.D., New York City.

Afternoon Session (3 p. m.). — 1. "Two Tracheal and Bronchial Casts," F. Huber, M.D., New York City. 2. "A Case of Death from Laryngismus Stridulus in Incipient Rachitis," Samuel S. Adams, M.D., Washington, D.C. 3. "The Value of Milk Laboratories for the Advancement of our Knowledge of Artificial Feeding," T. M. Rotch, M.D., Boston, Mass. 4. Action relative to the death of Dr. John Amory Jeffries, of Boston, Mass.

SAMUEL S. ADAMS, M.D., *Secretary,*
1632 K Street, Washington, D. C.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The annual meeting will be held at 19 Boylston Place, on Saturday, April 30, 1892, at 8 p. m.

Dr. G. W. Gay: "A Case of Nephrolithotomy; removal of a stone weighing five ounces; Recovery."

Dr. T. M. Rotch: "Improved Methods of Modifying Milk for Infant Feeding."

Dr. J. H. McCollum will show by (lantern slides) the various stages of the eruption of Small-pox.

Dr. C. B. Bell will read a circular of information in regard to the Pan-American Medical Congress; Dr. A. P. Clarke, of Cambridge, and Dr. Marcy will make remarks about it.

Selection of officers.

Supper after the meeting.

Members are requested to notify the Secretary at 188 Marlboro Street, of any error or change in address.

EDWARD N. WHITTIER, M.D., *President.*

JAMES J. MINOT, M.D., *Secretary.*

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting will be held Monday, May 2, 1892, at 8 o'clock, at 19 Boylston Place.

Readers: Drs. M. H. Richardson and J. G. Mumford, "Surgical Methods in Private Practice, with Report of Cases."

Dr. F. H. Williams will report "A Case of Transfusion after Intestinal Hemorrhage in Typhoid Fever."

JOHN C. MUNRO, M.D., *Secretary.*

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a meeting of this Section at 19 Boylston Place on Wednesday evening, May 4, 1892, at 8 o'clock.

Dr. S. J. Mixter, "Median Abdominal Section for Removal of Tumor of the Kidney; Recovery."

Dr. H. W. Cushing, "A Case of Nephrectomy; Recovery."

Dr. John L. Morse, "Tracheotomy with Delayed Removal of the Tube."

Dr. C. L. Scudder, "Diphtheria; Tracheotomy, Curetting the Trachea; Recovery."

CHARLES L. SCUDDER, M.D., *Secretary,* 94 Charles Street.

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THE MIDDLETON-GOLDSMITH LECTURE.

This lecture before the New York Pathological Society, will be delivered by Dr. Francis P. Kinnicut, Wednesday evening, May 11th, at the Academy of Medicine. Subject, "New Outlooks in the Prophylaxis and Treatment of Tuberculosis."

APPOINTMENT.

DR. W. S. HALSTED has been elevated to the full professorship of surgery in Johns Hopkins University. He was formerly assistant professor.

RECENT DEATHS.

SHELDON S. CLARK, M.D., of St. Albans, Vt., died April 21st, at the age of sixty-five years. He had been engaged in the active practice of his profession since 1849, he was a member of the Vermont State Medical Society and had been secretary and later the president of the Society.

¹ During the Sessions of the Society, the members are invited to visit and inspect the Milk Laboratory, 203 Clarendon Street.

Original Articles.

THE OPERATIVE TREATMENT OF GOITRE.¹

BY J. COLLINS WARREN, M.D.

TUMORS of the thyroid gland are not common in this country, and consequently the experience of American surgeons is small as compared with that of many on the continent of Europe, where within the last decade the operative treatment has received a considerable impetus.

The dangers of goitre appear to be due principally to dislocation and compression of the trachea and consequent interference with the respiration. There is also a certain amount of venous congestion in the cervical region, with consequent dilatation of the right heart, which may be followed by degenerative changes in the tissue of that organ. There may also exist some bronchiectasis and emphysema.

Pressure upon the trachea causes, in advanced cases of the disease, displacement and flattening of the tracheal canal, so that it presents an appearance known as the scabbard-like distortion. There is also, according to Rose, a softening of the tracheal rings, due to pressure, giving rise to a condition which favors the formation of a kink in the canal, following quick movements of the head, while the body is motionless. Sudden death may result under these circumstances. The disorders of respiration, seen in animals after removal of the thyroid gland, are regarded by Horsley as due to changes in the functional ability and activity of the respiratory centre, due to changes brought about in the nutrition of the tissues by the cessation of function of the gland.

The difficulties and dangers of thyroidectomy have usually been considered as objections to the operation. On this account many modes of treatment have been devised. It is not my purpose to give you this evening a complete summary of the various forms of treatment of goitre. I will, therefore, briefly refer only to one or two methods in which I have had some experience.

For clinical purposes the enlargement of the thyroid gland may be divided into three varieties — the vascular, the parenchymatous and the cystic. A favorite method of treating the vascular goitre is by electrolysis, and many of you are familiar with the monograph by Dr. Robert Amory. His results show that the operation is well suited to this variety, and if complete cure cannot be effected in all cases, considerable diminution in the size of the gland may be procured. Good results can also doubtless be attained in some of the parenchymatous types of the disease by this method.

The internal use of iodine may be of some use in young persons in diffuse forms of goitre; but, according to Bruns, if no change occurs in the size of the tumor very soon after the use of the drug, improvement is not to be looked for.

Parenchymatous injections of iodine have been employed, particularly in the cystic variety. A number of cases of sudden death are, however, reported as following the use of this remedy, although many favorable results have been obtained.

Death may be caused by embolism, and also by paralysis of the abductor muscles through reflex irri-

tation following an absorption of the iodine into the pneumogastric nerve or the recurrent laryngeal.

Wörner reports 75% of successful cases by this method, and in one case a single cyst, the size of a man's head, was cured in this way. It appears to be best adapted to single, thin-walled cysts. The possibility of suppuration following this mode of treatment should be considered, as well as the occurrence of hemorrhage from the interior of such cysts when once they have been opened.

The operation of thyroidectomy appears to be indicated in cases when the difficulty of breathing has become a prominent symptom, or when the tumor shows a tendency to grow rapidly and there is also some disturbance in the respiration. For cosmetic purposes solely, the operation should not be performed, except, perhaps, for a small nodule which can easily be enucleated.

The mortality of the operation has dropped, according to Bruns, from 41%, in 1850, to 5.8%, in 1884. Kocher reports 250 operations, with only six deaths.

The incisions recommended by different operators are either Y or V shaped, in the case of removal of both lateral lobes, or along the border of the sterno-mastoid if one lobe only is to be removed.

Several large subcutaneous veins are usually found running vertically over the front of the tumor. Their lumen is very capacious, and they retract quickly beneath the margins of the incision, and unless promptly secured with forceps are liable at any moment to give rise to troublesome bleeding. In order to reach the surface of the tumor, the edge of the sterno-mastoid must be sought for, and that muscle, which is thin and flattened, must be drawn aside. In two of my cases it was necessary to divide the sterno-thyroid and sterno-hyoïd muscles, but the omo-hyoïd, which frequently has to be divided in these operations, was not seen. On reaching the tumor, it is important to divide all layers of connective tissue until the capsule is reached. It is also important to avoid cutting into the tumor itself, owing to the difficulty in controlling the hemorrhage which ensues. Starting now from the median line the lobe should be slowly and cautiously separated from the surrounding tissues by the finger or some blunt instrument, and an effort made to reach its upper and outer border, beneath the margin of which the superior thyroid artery will be found. This should be clamped, as also a number of smaller vessels which have been divided in the meantime. The tumor is then drawn inwards and downwards until the inferior thyroid is reached, which must also be clamped and divided. Great care must be taken at this point to avoid clamping or cutting the recurrent laryngeal nerve, which lies close to and behind this vessel. The nerve is always hard to find, and in no case have I seen it. By keeping close to the surface of the tumor, and avoiding wandering between outlying layers of connective tissue, this mishap can be avoided probably in the great majority of cases. Large masses of tissues should not be hastily caught up with the forceps during this period of the operation. If the artery can be found and isolated, it would be well to pass a ligature around it with an aneurism needle. On approaching the trachea the knife has to be used more freely, as the tumor is usually quite adherent to its anterior surface.

In very large and adherent growths the operator may content himself with dividing the isthmus, as the

¹ Read before the Boston Society for Medical Improvement, February 8, 1892.

tumor may subsequently undergo atrophy after this operation. Pressure on the trachea will be relieved also in this way.

Whatever the method employed be, the bleeding is usually very free, and the operation more or less prolonged. Rose reports a case where 200 ligatures were applied, and the operation lasted several hours. The larger types of goitre, so familiar to the Swiss tourist, are fortunately rarely seen in this country. I am in the habit of using a small drainage-tube to avoid pressure on the trachea during the primary serous oozing.

The most important feature of the operation remains to be mentioned; that is, the necessity of leaving behind a portion of the thyroid gland, as myxedema is almost certain to develop if all the gland-tissue has been removed. It is true that quite a number of cases of "total extirpation" have been found without the occurrence of this unfortunate sequel, but it is probable either that a portion of gland-tissue has unwittingly been left behind, or that accessory glands existed. The presence of such glands is stated by one writer to be demonstrated in about one-half the cases examined. They lie in different places — near the arch of the aorta, at the side of the trachea, or between it and the oesophagus, or near the hyoid bone.

There are various theories still put forward as to the functions of this gland. By some it is supposed to be a blood-gland connected in some way with the development of the blood-corpuscle. It is also supposed to remove certain deleterious substances from the blood, or to prepare for the nerves certain substances which are necessary for their proper nutrition. It is also supposed to be a regulator of the circulation of the brain. It is probable, as shown from experiments on cats and dogs, all of which died after removal of these glands, that the organ plays an important part in the nutrition of the nervous system. Before this peculiar result of the removal of the gland was understood a large number of cases of total extirpation were performed. Kocher found a development of myxedema, or cachexia strumipriva, as it was originally called, in all but two of eighteen cases: as a recurrence of the growth took place in both of these cases it is probable that a portion of the gland was left behind in both instances. Reverdin in eleven cases of total removal had but five cases of cachexia.

In those cases where only a small fragment is left behind the symptoms of myxedema may develop to a certain extent and subsequently disappear after the fragment enlarges, as is usually the case. They may grow to considerable size, as the following case by Bircher shows:

A servant girl, twenty-seven years old, underwent the operation of total extirpation for a goitre accompanied with difficulty of breathing. The operation was followed by paralysis of both recurrent laryngeal nerves, the resulting hoarseness disappearing seven weeks later. Four weeks after the operation she became languid and sleepy, so as to be unfit for housework. Her mental condition deteriorated; her expression changed; and her complexion became pale and the skin wrinkled. This condition continued for two months, and gradually improved; and at the end of six months had entirely disappeared. In front of the larynx there was now to be seen a fragment of the thyroid gland, which had grown to the size of a fibert. It had evidently been left behind by accident.

Another case described by this author is of peculiar interest, as the symptoms of myxedema were temporarily relieved by the grafting of a fragment into the per-

itoneal cavity and apparently permanently removed by a second operation of the same kind.

A peasant woman, thirty-three years old, slightly affected by cretinism, was operated upon for partial removal of the thyroid gland. A small lobe, which it was intended to leave behind, came out accidentally with the rest of the tumor. The wound healed by first intention. Two months later she returned, and reported attacks of severe cramps. She was easily tired, and was always sleepy. Her appearance had changed entirely. Her face had become swollen under the eyes and about the cheeks and lips. Her gait was staggering. Her intellect was much deteriorated. Soon after entering the hospital she had an epileptic seizure. Six months later the marasmus had become so pronounced that she could not leave the bed. It was decided to try implantation of thyroid tissue into the abdominal cavity. Laparotomy was performed simultaneously with thyroidectomy in a case of partially cystic goitre. Two fragments, about the size of fiberts, were introduced through a small incision into the peritoneal cavity. A few days later improvement began to show itself, and in twelve days the patient was able to leave her bed and to walk about the ward. Her intelligence improved somewhat. At the end of two months, however, a relapse occurred; and the operation of implantation was repeated, about five times the amount of gland-tissue being introduced into the abdomen on this occasion. The myxedema swelling soon began to disappear; and, in the course of two months, the patient was able to do a good day's work as kitchen-maid. Six months after the second implantation the patient was still in good health.

The non-operative or atrophic myxedema is a rare disease and occurs sporadically, not being indigenous to any particular quarter of the globe. It is found more frequently in women than in men or children. It is supposed to have some connection with disturbed genital function, as it occurs frequently at the menopause. The disease develops slowly. The first symptoms are observed in the skin, which becomes rough and dry. The hair, sometimes the teeth, drop out, and the nails become brittle. The skin next becomes edematous, but there is not as in ordinary edema pitting on pressure. The face swells first, and loses its expression, later, the head, abdomen and extremities are affected; genuine edema may occur in the later stages of the disease when the internal organs have undergone extensive changes. The changes seen in the nervous system are more or less well marked. The reflexes are diminished; there is slowing of all movements and the gait is a rambling one. The power of co-ordination is somewhat disturbed. The intellect is at first intact, but later there are delusions, and sometimes delirium. The circulation is feeble; hemorrhages are often seen in the skin and mucous membranes, and the catamenia are irregular. The course of the disease is slow the duration varying from six to twenty years. Death occurs from exhaustion and visceral complications. The pathological changes consist in gelatinous hypertrophy of the connective tissue, particularly of the skin and subcutaneous adipose tissue, with enlargement of the lymphatic vessels. There is also a thickening of the walls of the arteries. The thyroid gland tissue atrophies and gradually disappears and the interstitial fibrous tissue becomes greatly increased in amount.

The operative myxedema or the cachexia strumipriva has become familiar since the general adoption of the total extirpation of the thyroid — an operation which has in consequence been abandoned. This type runs its course more rapidly. The cerebral irritation is more marked in consequence, and we find vertigo,

tetanic spasm and epilepsy in many cases. It may terminate fatally. It is interesting to note in this connection that after thyroidectomy in dogs the pituitary gland is swollen and the cells become vacuolated and ultimately disintegrated the longer the animal survives the operation. In sporadic cretinism when the thyroid gland is lost, the pituitary body has been found to be enlarged.² In this form, however, recovery may occasionally result either by the development of accessory lobes or fragment of gland tissue left behind, or by the implantation of portions of the gland. Those fragments left behind may grow to the size of a walnut, and it is only by the development of these fragments that the patient escapes the disease.

It is proved by experiment that dogs and cats cannot live without the thyroid gland—the animals become inert, sleepy and slow in movement. The sensibility is diminished and muscular twichings are frequent. Death occurs in four to twenty-seven days. At least one-third or in some cases one-fourth of the gland must be left to prevent the onset of the fatal cachexia. Shiff found that if a piece of gland was implanted into an animal the thyroid gland could be removed without injury. When animals thus treated were killed a few months later fragments of the original gland implanted were found still remaining. If the implanted gland becomes properly vascularized and resumes its functional activity the cachexia does not show itself, but if the gland undergoes atrophy and degeneration the cachexia supervenes. Colzi and Ewald found that the transfusion of the blood of healthy animals into the circulation of those which had been deprived of the gland delayed the cachexia. Improvement always followed subcutaneous injection of the juice of the gland. These observers conclude that the gland removes from the blood certain substances which are injurious to it if allowed to accumulate—a condition analogous to uremia after extirpation of both kidneys. Horsley found a diminution in the red corpuscles and an increase in the white corpuscles in experimental myxedema. There was a diminished power of coagulation and an increase in the amount of globulin and mucin in the serum, and also an increase of mucin in the parotid and submaxillary glands. Horsley holds that the "thyroid gland is a structure essentially connected with the metabolism of the blood and tissues; that in fulfilment of its functions it is haemopoietic both directly and indirectly, and that it forms, that is, secretes from the blood, a colloidal substance, which is transmitted via the lymphatics from the acini of the gland to the circulation."³

Cretinism is regarded by Bircher as essentially a different disease from myxedema. It occurs endemical and is found at an early period of life, and is associated with goitre. The change in the facial appearance, the motor disturbances and the alteration in speech and intelligence are common to both diseases, but we do not find the same changes in the hard skin and sensation as in myxedema. In the latter disease the pathological changes are found in the soft parts, but in cretinism the principal deformity is produced by alteration in the form and arrangement of the bones. These are particularly marked in the skull, which is much broader than in the normal state. The departure from the normal condition may be very slight in some forms, little being noticed beyond an enlargement

of the thyroid. In another class of cases deaf-mutism is the principal symptom. In the more prominent type the patients are idiotic. The speech is affected in the great majority of all cases, a symptom rarely noticed in myxedema. It is more common in male adults in its severest type.

The following series of four cases represent the extent of my experience upon the subject. They show that the milder forms can be easily removed by an operation apparently harmless, but one, at the same time, not without its dangers. When, however, we consider the great deformity and discomfort of a large bronchocoele and the danger of sudden death, we are hardly authorized in declining to perform the operation.

CASE I. Cyst of thyroid. H. M., seventeen years of age, a domestic, was born in New York, but has lived for many years in Wakefield, Mass. She entered the hospital November 10, 1891. Her father died of consumption and she herself has never been healthy. Seven years ago she first noticed a little tumor in the front of her neck which has grown steadily until two months ago a little additional nodule began to form below. On examination the thyroid gland appears to be symmetrically developed and a swelling about the size of a lemon occupies the median line of the neck, smaller growth appears to be attached to the tumor at the lower right-hand corner. There had been occasionally slight disturbance of respiration, but the patient was anxious for the removal of the tumor, partly on account of the deformity as it showed a tendency to increase in size. The operation was performed on November 15th. An incision was made in the median line about four inches long over the tumor, which, when exposed, was found to be cystic. When the cyst wall was reached it was enucleated without much difficulty from the normal gland-tissue. There was very little hemorrhage, a quill-drain was inserted and the edges of the incision were brought together by interrupted sutures and a light, dry dressing was applied.

The patient rallied well from the operation, but about five hours after the operation, while my assistant, Dr. Bartol, was in the ward, respiration suddenly ceased, the patient became cyanotic and the jaws were firmly closed. Tracheotomy was performed by Dr. Bartol immediately and an elastic catheter was introduced and retained until a tube could be obtained. The tube was allowed to remain for forty-eight hours. The patient made a rapid recovery and was discharged December 3d with the wound entirely healed. She visited me recently, about a year after the operation, and was in excellent health without any signs of thyroid enlargement.

The following report was made by Dr. Whitney:

"Cystic growth from region of thyroid. Section shows several cysts, the largest was the size of a small peach filled with dark, reddish-black fluid, showing blood-corpuscles, granular-corpuscles and cholesterol crystals. Section of wall shows normal thyroid tissue with here and there a tendency to cystic dilatation. Diagnosis: goitre with cystic degeneration."

CASE II. Cyst of thyroid. L. M., age twenty-seven, married; born in Massachusetts, lives in Quincy. Entered the hospital January 5, 1892. Her family history was negative. Was always well and has had five children. Four years ago the patient first noticed a small swelling in the neck which has grown very

² Horsley.

³ British Medical Journal, January 30, 1892.

slowly and has never pained her. She states that she has some difficulty in swallowing and that her breathing is somewhat impeded and that she suffers from dyspnoea on exertion. On examination a tumor the size of a large hen's-egg is seen just below the cricoid cartilage on the right of the median line. It is soft and movable and ascends and descends with the movements of the trachea during the act of swallowing. Pulse 90, strong and regular. The eyes are not prominent.

A laryngoscopic examination was made on January 6th, by Dr. J. P. Clark, who states that the rima glottidis was practically in the median line; motion of cords free, although in respiration the right cord does

laryngoscopic examination showed portions of the gland in the wall of the cyst. Cyst of thyroid."

CASE III. Parenchymatous growth of thyroid. C. M., forty years of age, was born in Canada but lives at present in Boston; is married and had one child eighteen years ago, two still-births since. Her mother and one sister are both the subjects of goitre. Her general health has been good. Eleven years ago the patient first noticed a small swelling corresponding to the right lobe of the gland followed later by a similar condition on the left side, eventually there was enlargement of the isthmus. The tumor has grown slowly and has varied considerably in size from time to time. During the past year there has been an in-



FIG. 1. Before Operation.



FIG. 2. Cleatrix Fourteen Days after Operation.

not move as far from the median line as the left. Some prominence below the right cord of the tracheal wall. No evident diminution of the calibre of the trachea.

Operation, January 9, 1892. An incision parallel to the anterior border of the sterno mastoid muscle was made over the tumor, exposing the wall of the cyst which was carefully dissected out with but little hemorrhage. It was found to contain a dark fluid. A small drainage-tube was inserted and the edges of the wound brought together by silk sutures.

The stitches were removed on the sixth day, and the wound healed promptly except at the point of drainage where a small sinus remained for two or three weeks.

Dr. W. F. Whitney made the following report of the microscopic examination: "A cystic growth of the size of a small peach in one lobe of the thyroid. Mic-

roscopic examination showed portions of the gland in the wall of the cyst. Cyst of thyroid."

On examination a tumor of dumb-bell shape is seen stretched across the trachea. The right lobe is about the size of an orange and the left lobe is the size of a goose-egg. There are numerous enlarged veins running over its surface. It is movable and rises with the larynx on swallowing. There is no pulsation.

Laryngoscopic examination by Dr. J. P. Clark: "Rima glottidis obliquely situated, being turned somewhat to the right. The trachea is bent to the left slightly. No constriction as far down as the fourth or fifth ring. Motion of cords apparently free and equal."

Operation, January 9, 1892. A curved incision with convexity downwards was made from the apex of left

lobe to that of the right lobe, and the operation performed as already described. Two small fragments of gland-tissue are left behind, one in the left lobe about the size of half a walnut, and one in the isthmus of the same dimensions. Two quill tubes were inserted to avoid pressure during the early oozing of the walls of the wound. The stitches and tubes were removed on the third day, and the wound dressed with collodion and cotton. A small collection of pus subsequently formed at the most dependent point of wound, and left a sinus which had not healed three months after the operation, when the patient left the convalescent home. There were at that time no signs of myxœdema.

Microscopical examination by Dr. W. F. Whitney: "Several large, dark, rounded growths from thyroid region. Section showed some small cystic cavities, the walls in places infiltrated with lime salts, but in general the growth was of the character of the thyroid, but with enlarged alveoli containing a colloid material. Bronchocelæ."

This patient suffered from aphonia for several weeks after the operation, and a laryngoscopic examination showed that the right vocal cord was paralyzed. The voice, however, was subsequently fully restored.

CASE IV. A. S., single, twenty-five years of age, entered the hospital February 1, 1892. She was born in Ireland, and lives at present in Dorchester. Her family history is good. She has always been healthy. Five years ago she first noticed a "bunch below the Adams apple." This has grown steadily since, although it varies at times somewhat in size (Fig. 1). There is no difficulty in swallowing and no change in voice or breathing.

On examination an enlargement of the thyroid gland is seen on both sides, that on the left being about the size of a large orange, and about twice as large as that on the right. The tumor is non-pulsatile and moves with deglutition. The larynx and trachea are displaced somewhat to the right of the median line. There is no protrusion of the eyes. Extirpation of the gland performed February 6th. A semilunar incision, about five inches in length, was made from the apex of the left lobe downwards and across the median line to a point considerably lower on the left (Fig. 2). A number of large veins were divided, but there was no great difficulty in controlling the bleeding as the capsule was separated from the surrounding tissues. A portion of the right lobe, about the size of a horse-chestnut, was allowed to remain. One quill drainage-tube was inserted, and the edges of the wound were brought together by silk sutures. The dressing was applied loosely, but sufficiently firm to prevent exposure of the wound.

The wound healed by first intention, the drain having been removed on the second day. The photograph (Fig. 2) was taken about ten days after the operation. A microscopical examination showed a growth similar to that found in Case III.

In a case of large cystic goitre, which recently came under my notice, where tapping and the injection of iodine had been tried, the swelling and signs of suppuration induced me to lay open the sac freely and pack it with iodoform gauze, which operation was successfully performed without any trouble from hemorrhage. The tumor was about the size of a cocoanut. I have not yet heard of the subsequent history of the case.

TUBERCULAR ULCERATION OF THE HARD PALATE AND GUMS.¹

BY A. COOLIDGE, JR., M.D.

The lesion to which I wish especially to call attention is a tubercular ulceration which occurs on the gums around the upper front teeth and on the hard palate just behind them. Its usual appearance is that of a coarse, granular ulceration, deep red, and often in places presenting a raspberry appearance. It is most active close to the teeth, and there is little or no swelling. The edges of the ulcer on the hard palate are not elevated, and often merge gradually into the healthy mucous membrane. The mucous membrane alone is attacked; there is no caries of bone. It is essentially chronic in its history, and shows no attempt to heal, at least, while the teeth remain. The gums may be slowly absorbed, leaving the roots of the teeth bare.

This appearance has been described as occurring secondarily, both in cases of primary lupus of the face and of the throat. It has also been seen in connection with more active tuberculosis of the lungs, pharynx and other organs.

The anterior palatine canal has been suspected as the channel through which the disease extended from the nose to the palate, or from the palate to the nose, and this seems to be borne out in two of the cases which I report. It surely seems possible that this lesion of the gums may be the bridge by which lupus or other tubercular disease may pass from the throat to the nose, or vice versa.

In the three cases which I report, the lesion of the gums and hard palate is the only symptom which occurs in all. In none of them has there been up to this time any disease of the lungs, larynx or epiglottis.

CASE I. The first case is a typical one of lupus. I. K., twenty-one years of age. Her grandmother died of phthisis, her family history otherwise negative, previous health good. In 1888, she noticed a sore spot on the gum above the right canine tooth, which in the course of two or three months had spread around the gums of the upper incisors on to the hard palate just back of the teeth, and appeared as a small spot inside the nostril, after which it appeared on the face. When the fauces became involved it is difficult to say. The patient noticed that she was growing deaf a year before the spot appeared on the gum, but did not notice any serious trouble in the throat until afterwards. The disease in the pharynx gave the patient so little discomfort that she did not realize that there was any serious trouble there until extensive cicatrices had formed. I suspect that the soft palate was the primary seat of the disease. I first saw her in August, 1890, she was, and still is, being treated by Dr. J. C. White for lupus of the nose and face. The gums round the upper incisors, and the mucous membrane of the hard palate, for an inch back of the incisor teeth, showed a granular ulceration of a deep red color. The pillars of the fauces and the velum had coalesced with the posterior pharyngeal wall leaving only a small opening into the nasal pharynx. The uvula had disappeared, the velum and back of the pharynx were white, cicatrical and hard, except that on the borders of the cicatrical tissue in some places were slightly elevated, inflamed nodules. From January until May, the patient was in the Massachusetts

¹ Read before the Boston Society for Medical Improvement, February 8, 1892.

General Hospital for treatment with tuberculin. While there, a small ulcer appeared on the tongue about an inch from the tip, which has slowly extended since, until it is now about the size of a quarter. The ulceration of the gums spread somewhat on to the mucous membrane of the lip. The treatment produced little or no permanent effect upon the local disease. On two or three occasions, the white cicatrical tissue of the pillars has become inflamed, and local ulcerations have temporarily appeared, a process which has often been noticed in lupus of the throat.

At present, the patient is in much the same condition as when first seen, except that the skin has improved very much under treatment and that the tongue is involved. The granulations of the gums have resulted in their contraction, so that the roots of the teeth are more exposed than formerly. The molar teeth are also surrounded by granulations. The mucous membrane of the hard palate is ulcerated in the vicinity of the teeth, and cicatrical in the centre.

CASE II. G. H., aged eighteen years. Her two grandmothers died of phthisis, other members of the family including the patient have always been delicate; family history otherwise negative. She has for some years been a patient of Dr White at the Massachusetts General Hospital. At the age of fourteen the patient had diphtheria followed by enlarged glands of the neck, which discharged externally for a short time. A year later a spot appeared on the leg, which increased to about the size of a silver dollar, ulcerated, and after a few months cicatrized. She subsequently had five or six similar patches on the leg and arm. In 1887, her throat began to be sore and to feel swollen, and she began to be deaf. The next year, she noticed a spot on the hard palate, which soon spread to the gums of the incisor teeth. I saw her first in September, 1889, there was then nothing on her skin but the cicatrices mentioned above. In the throat, the left anterior pillar was of a pale pink color and irregularly thickened. The right pillar was ulcerated, cicatrizing round the edges of the ulcer with very little infiltration, and there was some loss of substance. The uvula was nearly buried by the cicatrization of the pillars. The interior of the nostril was normal. On the hard palate for about an inch behind the front teeth and on the gums around the incisor teeth, there was a granulating ulcer. The patient was given full doses of mercury and iodide of potash for some time, but the local disturbances were apparently made worse by the treatment. For over a year different applications were made but without effect, except that after curing the ulcer of the hard palate it cicatrized, but broke down again in a few weeks. It spread very slowly on to the mucous membrane of the upper lip, and by the destruction of the gums the roots of the teeth became prominent. In the autumn of 1890, a small ulcer appeared on the floor of the right nostril. At the same time also the ulceration of the right pillar extended on to the pharyngeal wall, but later cicatrized, binding the pillar and wall of the pharynx together on that side. In January, 1891, she entered the City Hospital in the service of Dr. George B. Shattuck, for treatment with tuberculin. Examinations of scrapings from the gums failed to show any tubercle bacilli. After injections with tuberculin, the ulcerations round the teeth and in the nostril became inflamed, the pharynx was less actively affected. The ulceration in the nostril extended, being preceded by an in-

flammatory zone, which finally attacked the skin of the nose just above the ala, and also the septal cartilage. While in the hospital the destruction of the gums was more rapid, the incisor teeth were so loosened that they were removed. An interesting point is that after the removal of the teeth, the ulceration of the hard palate, gums and mucous membrane of the lip which had existed for three years, cicatrized speedily leaving only a slight ulceration around the canine teeth. This has continued since, and has already loosened the canine, and has attacked the molars. At present, the patient has upon the side and bridge of the nose an ulcer about the size of a five-cent piece, with elevated edges, a destruction not only of the skin, but also of the septal cartilage. The patient's general condition is much better than it was a year ago.

CASE III. M. F., twenty-seven years old, family history negative, previous health excellent, except that she had frequent headaches, which disappeared entirely while the mouth was sore, but have now returned. Five years ago, her brother noticed an ulceration, apparently tuberculous, on the edge of his left nostril, which has been under treatment, and which has, up to this time, involved only the skin around the nostril. Two years ago, the patient first noticed a sore spot on the gum over the left canine tooth, which slowly spread during a year and a half around the incisor teeth and on to the hard palate. I first saw her in the out-patient department last May. The gums around the front teeth and on the hard palate for half an inch behind them were ulcerated, deep red and coarsely granular. The patient complained of a tender spot on the floor of the left nostril, but nothing could be seen there. Except for this ulceration, the patient presented no signs of disease. She had felt run down for a few months, but was otherwise in good health. A month later, the disease had spread slightly. She was then sent into the hospital where, on July 25th, Dr. F. B. Harrington resected the upper jaw, removing all trace of the disease. The patient made a good recovery, and in three months had gained fifteen pounds. There has up to this time been no return of the disease. The part removed contained the alveolar process as far back as the first molar teeth and the anterior part of the palatal process. The teeth although well-cared for had been very subject to caries as is seen by the number of fillings which they contain.

In reviewing these cases, we find a very similar lesion of the gums and hard palate in three cases presenting very different clinical histories; and this I have found to accord with previous reports. The granular ulceration of the gums has been most frequently seen in connection with lupus of the nose, especially where the soft palate or the larynx is also involved. The first of my cases belongs to this class. In the second case it appeared with a condition of the throat which has been described as scrofulous. In the third case the lesion on the gums and hard palate and a small spot in the nostril are the only evidence of disease.

Lennox Brown, in his book on diseases of the throat, puts under the head of tuberculosis only the more malignant form seen in connection with tuberculosis of the lungs and other organs. Lupus he considers a distinct disease, clinically at least. There is surely a great difference between the more malignant tuberculosis and the very slow progress often seen in lupus of the pharynx which tends to form hard cicatrices and which may lose all activity, at least temporarily.

There are, however, certain cases which are slow in their course and in which the diagnosis of lupus from the appearance in the throat alone is hard to make. That lupus may be primarily in the throat is not now doubted. Such a case was reported by Dr. F. I. Knight,² in 1881, before the American Laryngological Association, and similar cases have been reported since. The differential diagnosis between lupus and other tubercular lesions in the throat is often difficult. In the mouth, and especially around the teeth the distinction is even more difficult to make. Clutton³ prefers to call it tubercular ulceration, and the same view is taken by Michelson⁴ in a review of the literature of the subject. Tuberculosis of the mouth is generally secondary to tuberculosis of the lungs, pharynx or other organs, or to lupus. Primary tuberculosis of the mouth is not common. Some cases have, however, been reported, in most of which the disease has soon appeared in other parts of the body.

Tubercular ulceration of the gums and of the hard palate just behind the gums generally shows no tendency to heal, at least while the teeth remain. It tends to destroy the gums and loosen the teeth, and altogether acts as if the tissue immediately around the teeth were a favorable seat for the disease. It has been suggested that when the disease spreads from the gums to the nose, or from the nose to the gums, it does so through the anterior palatine canal. The lip is seldom involved, and the bone never.

I think that it is important to recognize the malignant character of this form of ulceration around the front teeth, and in cases in which both the nose and

the soft palate, or pharynx, or larynx are not already involved, to take active measures to check the disease, and if possible to prevent it crossing by this bridge from the nose to the throat or vice versa. Of primary importance in the treatment is the removal of the teeth, the gums of which are attacked. While the teeth remain, the gums show no tendency to heal; after the teeth are out the gums are much more amenable to treatment. In my second case, by using the curette and galvano-cautery, the ulcer on the hard palate cicatrized, but the disease could not be got at around the teeth, and the cicatrization was only temporary. After the teeth had been removed the ulcer cicatrized readily; but by that time the nose was involved, apparently by direct extension. In the third case the unhealthy tissue was entirely removed, and I hope that the patient has been saved from tuberculous disease in other places. I have not been able to find a report of a similar operation for this trouble.

Microscopic examination of the mucous membrane, from Case III, after hardening in alcohol and imbedding in celloidin, showed a granulation tissue resembling in every respect that seen in tuberculosis, namely, very numerous Langhans giant-cells, intermingled with epithelioid and small round cells. The number of Langhans cells corresponded to those found in lupus, as distinguished from some of the other forms of tuberculosis. There was very little "cheesy degeneration" seen. A few sections stained by the Ziehl method failed to reveal the presence of tubercle bacilli, but the bacteriological examination was not sufficiently thorough to warrant any deductions.

SEASON AND DISEASE-PREVALENCE IN CAMBRIDGE, 1880-1889 INCLUSIVE.

BY EDWIN FARNHAM, M.D., CAMBRIDGE, MASS.

Max. ±, min. =, above average +, below average -.

DISEASE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	4th Quarter.	Total.	Monthly Average.			
				1st Quarter.			2d Quarter.			3d Quarter.			4th Quarter.					
Diphtheria . .	67 ±	37 -	43 -	147 -	43 -	59 +	47 -	149 -	55 +	44 -	34 =	133 =	63 +	62 +	64 +	189 ±	618	51.50
Scarlet Fever . .	20 ±	12 +	12 +	44 +	5 =	13 +	6 -	24 -	5 =	5 =	10 -	20 =	11 -	18 +	17 +	46 ±	131	11.16
Typhoid Fever . .	14 -	6 -	6 -	26 -	3 =	6 -	7 -	16 -	8 -	20 +	29 +	57 =	42 ±	27 +	24 +	93 ±	192	16.60
Measles . . .	3 -	2 -	4 -	9 -	6 +	22 ±	16 +	44 ±	7 +	6 +	1 -	14 -	0 =	2 -	2 -	4 =	73	5.91
Whooping Cough . .	13 +	6 -	8 -	27 +	4 -	5 -	2 =	11 =	18 ±	11 +	18 ±	47 ±	9 +	5 -	3 -	17 -	102	8.50
Diarrhoeal Diseases . .	8 =	8 =	8 =	24 =	9 -	10 -	43 -	62 -	343 +	383 ±	193 +	919 ±	62 -	19 -	8 =	89 -	1064	91.16
Bronchitis . . .	51 ±	47 +	36 +	134 ±	42 +	32 -	25 -	99 +	16 -	14 =	15 -	45 =	28 -	36 +	44 +	108 +	386	32.16
Pneumonia . . .	119 +	98 +	110 +	327 ±	127 ±	93 +	48 -	268 +	42 -	27 =	40 -	109 =	63 -	97 +	118 +	278 +	982	81.83
Phthisis . . .	157 +	161 +	167 +	485 +	178 ±	152 -	159 +	489 ±	131 =	146 -	138 -	415 =	155 +	150 -	161 +	468 +	1835	154.58

SEASON AND REPORTED CASES OF DIPHTHERIA, SCARLET FEVER AND TYPHOID FEVER IN CAMBRIDGE, 1880-1889 INCLUSIVE.

Diphtheria . .	235 +	166 -	167 -	588 +	180 -	193 -	154 -	327 -	172 -	133 -	124 =	429 =	265 +	259 +	272 ±	785 ±	2329	194.08
Scarlet Fever . .	230 +	184 +	195 +	669 +	143 -	139 -	120 -	402 -	100 -	77 =	126 -	363 =	190 +	257 +	279 ±	726 ±	2040	170.00
Typhoid Fever . .	61 -	40 -	27 -	138 -	16 =	20 -	25 -	61 =	35 -	183 +	233 ±	470 +	219 +	165 +	94 -	478 ±	1137	94.75

The diseases contained in the accompanying table were selected on account of the large contingent sup-

plied by them to the deaths from all causes, and because some of them belong to the class of diseases it is customary to call preventable, while others are ones which we hope to see hereafter included in that class.

¹ Archives of Laryngology, vol. II, 1881, p. 273.

² Clinical Society Transactions, vol. xii, 1886, and vol. xx, 1887.

³ Zeitschrift für Klin. Med., 1890, xvi, p. 202.

In the period considered, the total number of deaths was 11,541, to which those here given contributed 5,434 (47%). The signs used are of little absolute value apart from the figures; for instance, in October scarlet fever has the sign —, in February and March the sign +, while the figures are 11 and 12.

In comparing individual months it must be borne in mind that February contains 283 days, the longest months 310 and the others 300 each. So also with the quarters: the third and fourth are equal, 220 days each, while the second has 910, and the first 903.

Diphtheria, scarlet fever and typhoid fever are notification diseases. In them the maximum number of deaths fell in the months immediately following those during which the maximum number of cases were reported.

Measles. — Not a notification disease during this period. No death from it in October. Out of 71 deaths, 38, or 53%, occurred in May and June. In the last four months only five deaths.

Whooping-Cough. — Not a notification disease. Of 102 deaths, 47 occurred in third quarter, 46% of the total. January had a large number, while June and December contained respectively two and three deaths.

Diarrhoeal Diseases. — Includes diseases certified under the following names: diarrhoea, summer diarrhoea, infantile diarrhoea, inflammatory diarrhoea, summer complaint, enteritis, gastro-enteritis, entero-colitis, colo-enteritis, colitis, cholera infantum. The third quarter contains 84% of all the deaths from these diseases.

The greatest incidence and largest number of deaths in these diseases probably coincide pretty closely.

Bronchitis and Pneumonia. — Beginning with the third quarter, the minimum one for both, they rise in the second, with a further rise in the fourth, to reach their maximum in the first quarter.

In bronchitis, the rise from the minimum month, August, to the maximum month, January, is an unbroken one, while in the decline April appears to break the regularity.

In pneumonia, the rise from August, the minimum month, to April, the maximum month, has its regularity broken in February and March. In February, we are, of course, dealing with a shorter period than in the other months.

In bronchitis, the fourth plus the first quarter contains 62% of the total deaths. In pneumonia the same period contains 61%. In bronchitis, the minimum month, August, is to the maximum month, January, as 1 is to 3.6. In pneumonia the proportion is as 1 to 4.7.

Phthisis. — During the period considered this disease caused 16% of all the deaths. Its maximum month coincides with the maximum month of pneumonia. While the signs represent phthisis, pneumonia and bronchitis as above the average during January, February, March and April, the figures show the percentage of deaths from those diseases respectively during these three months to have been as follows: bronchitis 45%, pneumonia 46%, phthisis 35%. If we take July, August, September and October, it will be seen that bronchitis has fallen to 18%, pneumonia to 17%, while the phthisis deaths are 30% of the total.

Typhoid Fever. — In August, September, October and November, 819 cases, 72% of the total, occurred.

Diphtheria. — Though prevailing at all times there is between its maximum and minimum months a difference of more than 100%. It rises abruptly from Sep-

tember to October, and falls abruptly from January to February. From February to September it seems to oscillate irregularly.

Scarlet Fever. — The proportion of the minimum to the maximum months is as 1 to 3.6. The rise from the minimum to the maximum month is more regular and shorter than the decline, the former comprising four monthly waves, the latter eight. The fourth and first quarters contain 65% of all the cases.

NOMENCLATURE OF PEDICULOSIS.¹

BY CHARLES W. ALLEN, M.D., NEW YORK,
Surgeon to the Charity Hospital, etc.

MOST of the text-books, in this country at least, treat the subject of pediculosis into the three general varieties: *pediculosis capititis*, *pediculosis corporis* and *pediculosis pubis*.

Against the designation of the first variety I have no objections to offer. The pediculus which inhabits the hairy-scalp confines his entire attention to this region and it is only by accident that he is found upon any other portion of the surface. The pediculus which habitually goes by the name of the body-louse or pediculus corporis does not however live upon the body as the head-louse lives upon the scalp. His habitat is in the clothing; and it is only for purposes of feeding, and possibly of exercise and recreation, that he makes excursions upon the skin's surface. If you strip a subject affected with this variety, only a laggard who has been caught unawares can be found upon the skin, and he will make all haste to rejoin those remaining upon the clothing. Instead of laying their eggs upon the hair-shafts as do both the other varieties, these like deposit their ova along the seams of the garments. For these reasons, it seems to me, this variety should be called only by its other name, pediculus vestimenti, and the term pediculus corporis be given up exclusively to designate what is now universally known as the pediculus pubis or crab-louse. From the extensive migrations of this last mentioned pest, wandering, as it does, wherever hairs abound, and not even sparing the scalp in rare instances, as in a case of an infant of five months reported by Trouessart,² it has come to be variously called according to the situation in which its presence is most prominently made known; *pediculus inguinalis*, *pediculus axillaris*, *pediculus palpebrarum*, *pediculus ciliorum* and *pediculus barbe*.

Now, all this leads to confusion, and explanations have to be entered into whenever we speak or write of the *phtheirus inginalis* as occurring in locations other than the genital regions, and if pediculosis ciliarum or axillarum is mentioned, one must explain, to students at least, that the particular louse in question is the so-called pediculus pubis.

There is another reason why the latter should be distinguished as the body-louse and that is its decidedly great prevalence in many quarters over the pediculus vestimenti. In my office I see frequent instances of the former in both sexes, and rarely if ever one of the latter. In the report of the Good Samaritan Dispensary for 1891 we find that, in the two principal classes, 232 phtheirus cases were treated. Of these 185 were of the head, 36 were due to the pediculus pubis,

¹ Read at the New York Dermatological Society, February 23, 1892.

² Le Bulletin Medical, January 6, 1892.

and only 11 to the pediculus vestimenti. Beside this, in the eye class, where of necessity only the one kind would be found, there were no less than 85 instances of phtheiriasis ciliorum out of a total of 5,974 eye cases treated. The same proportion is found to obtain in former years; thus in 1889, out of 202 instances of pediculosus, 135 were put down to the credit of the head louse, 56 to that of the pediculus pubis affecting various regions, and again only 11 to the pediculus vestimenti. Here, too, the proportion is increased by 68 cases of pediculosus of the lids in the eye department.

At the Charity Hospital we naturally have more phtheiriasis in the skin wards, due to the irritation of the pediculus vestimenti, than to that of the crab-louse; but this is simply because the latter does not, as a rule, cause that amount of scratching and consequent alteration in the skin which would call for hospital treatment. The prevalence of the crab-louse among the patients at large is, however, very great; and as it is so often found in the armpits, upon the chest, down upon the thighs and legs, in the beard, and upon the margins of the eyelids, it is only due to its enterprise to give it the more dignified and comprehensive name, *pediculus corporis*.

Clinical Department.

PANCREATIC CYST APPARENTLY CURED BY INCISION AND DRAINAGE; RECURRENCE, PERFORATION OF THE STOMACH, DEATH, AUTOPSY.¹

BY MAURICE H. RICHARDSON, M.D.

THE case of D. C. L. was reported in the *Boston Medical and Surgical Journal* for January 29, 1891. He had been admitted to the Massachusetts General Hospital on October 10, 1890. A diagnosis of pancreatic cyst was made and operation advised. On October 24, 1890, the cyst was exposed and drained. The tumor, everywhere adherent, was found and drained without any difficulty. He made a good recovery and was discharged from the hospital, wearing a drainage-tube, on the 26th day of November, 1890.

February 3, 1891. Mr. L. reported to me that he felt very well indeed, that he had grown stronger and fleshier. He had, from time to time, attacks of dizziness in the head. He still wore the tube. There was no change in the character of the clear white fluid discharged from the sinus, and its amount was considerable.

May 26, 1891, he said: "There seems to be less discharge. There is something about four inches deep which hinders the tube going in. It is just before it strikes the water." General health and appearance very good.

July 9, 1891. "The discharge has ceased almost entirely, but it is sore in the region of the tube, and there has been, for a week, some matter." I removed the tube and the sinus became closed in a few weeks. During the fall the patient called occasionally and I had the opportunity often to examine the abdomen. Nothing abnormal could be detected by physical examination, and I looked upon the case as one of perfect and permanent cure.

On Saturday evening, January 23, 1892, I was

¹ Read before the Boston Society for Medical Improvement, February 8, 1892.

asked by Dr. Cowdrey, of Stoneham, to go out early the following morning prepared to operate upon Mr. L., because it was thought that he was suffering from acute obstruction of the bowels. I found him in great pain, vomiting constantly large quantities of greenish-black fluid. The abdomen was distended and everywhere tympanitic.

History. — Dr. Cowdrey gave the following history: Some two weeks ago, Mr. L. was taken with a cold, to which he was subject. With the cold he had quite a severe attack of diarrhoea. The cough which accompanied the cold, and seemed like asthma, left him. Then, a week ago Friday, he said that he had been sick all day, and that he could feel a lump in his stomach. That night he was quite restless. Two weeks before that time — that is, between three and four weeks ago — he said that he never felt better in his life, that the old trouble had entirely disappeared. There was nothing in the stomach which he complained of. During the last three or four weeks his appetite has been poor, although otherwise he has been about the same as before. On Saturday he stayed at home all day, and there was no vomiting and no pain. On the Monday previous to my visit he felt no better. He referred his trouble to his stomach. On Monday night he took a pill, which produced free operation some time towards morning. There was no fever. On Tuesday he said that his stomach did not feel right, although he had no pain. He could not get rid of that lump in his stomach. He was nervous and restless and has a feeling of distress. On Tuesday night he was taken with the same distress, and we sent him to bed and put on hot flannels. At this time he began to vomit, which was the first attack of vomiting that he had. I found him, on Wednesday, vomiting what seemed to be bilious matter. Temperature was normal, pulse was about 80. I gave him morphia subcutaneously, on account of the distress. I found the epigastrium full, but there was no fulness in the abdomen. There was this prominence below the ensiform cartilage. There was some nausea and some pain all over him. Tongue was furred. Since my visit nothing has passed him, except some gas this (Sunday) morning. He is terribly thirsty, but he vomits whatever water he drinks immediately.

Physical Examination. — General appearance fair. Tongue coated slightly. There is incessant vomiting of very dark, greenish fluid, almost black, and odorless. Over the scar of the original operation there is a slight hernia. The abdomen is everywhere tympanitic. Deep pressure reveals a tumor which fills the epigastrum and extends from the region of the liver to that of the spleen. In front of the tumor it is everywhere tympanitic. There is no tenderness.

I could not satisfy myself that there was any fluctuation. His condition was not good. Pulse was 120, and of poor quality; face flushed, and expression anxious. He said he preferred to die rather than to be obliged to wear a tube all his life. It seemed to me that, on the chances, the tumor had refilled, and that the obstruction which apparently existed was due to the pressure of the mass upon the duodenum, or the upper intestine somewhere. I advised immediate interference with the hope of finding something which could be relieved by a very short operation.

Assisted by Dr. J. H. Swasey, of New York, I opened the abdomen through the scar of the former operation. On separating the adhesions, I found the

anterior wall of the stomach presenting, pushed well forward by a tumor behind. I separated the adhesions in the region of the duodenum, where there seemed to be a hard mass about the size of an egg, with one or two nodules like lymph-glands. To the left the tumor was quite well defined. The mass in the region of the duodenum seemed to be malignant, and not to admit of any permanent relief. The patient's condition was very bad, and I abandoned the operation, closing the wound with interrupted sutures in the usual manner. During the operation, which was very brief, not lasting more than fifteen minutes in all, the pulse became very feeble and respiration alarming. It seemed impossible for him to recover under any circumstances. I was much surprised by his rapid recovery from the operation and the ether. On the following day I aspirated the tumor through both walls of the stomach, and withdrew about two quarts of dark fluid in gross appearances precisely like that vomited the days before the operation. He was much relieved by this, and vomiting ceased immediately. He said, "I feel as though five hundred pounds were taken off of me." He suffered no more pain that afternoon and vomited none. His nourishment was increased until he took about four ounces every hour and a half. He continued in this way about seven days, and on the following Saturday began to have movements of the bowels. On Sunday he began to fail, the pulse became intermittent and more rapid, and he refused to take his nourishment. From that time he gradually grew weaker, and died Friday morning, February 5th. He had no pain from the time of the operation until his death.

Autopsy., by Dr. W. F. Whitney on February 5th, at twelve o'clock, five hours after death. After opening the abdomen I made an examination of the cyst which had become refilled, but which was not as tense as at the time of the exploration on the preceding Sunday. On examining in the region where I felt the hard mass before, my finger accidentally passed into the cyst. This showed the friable nature of the cyst at this part. It was very difficult, and even impossible, at the time of the autopsy to dissect the cyst out from the parts to which it was adherent.

Dr. Whitney's report is as follows: "Lying between the stomach and the transverse colon, covered by the omentum and adherent to the stomach wall, was a cyst almost the size of the stomach, lined with a membrane looking like a mucous one. Dissection revealed a normal head of the pancreas in connection with the duodenum. A small probe could be passed through the pancreatic duct directly into the cyst. At the opening into the cyst was a minute white thickening, suggesting connective tissue. About two inches of normal pancreatic tissue was found lying between the cyst and the spleen. From this also a duct could be traced into the cyst. At the point of attachment of the cyst, near the pylorus, was a perforation into the stomach, the mucous membrane of which was dissected up in various directions. Although not absolutely proved, the appearances were highly suggestive of an ante-mortem perforation. The gall-bladder was dilated and thickened. The other organs were normal."

There was no peritonitis from the second operation. The hard mass and the nodules found at the operation proved to be the head of the pancreas. There was no evident of malignant disease whatever. Clinically this case would seem to show that communication existed between the stomach and the cyst at the time he

was vomiting the peculiar fluid described. It was impossible to distinguish the vomitus from the aspirated fluid by color, odor, or other gross appearances. Why this communication, if it did exist, should have caused his uncontrollable vomiting seems to me inexplicable, nor can I understand why the vomiting ceased immediately upon relieving the tension, unless it was caused by pressure upon the stomach or duodenum or an actual mechanical obstruction. Another possibility was suggested by Dr. Whitney, that the tumor caused an irritation of the solar plexus. It is very evident from the appearance of this cyst and from its intimate connections with other organs, from its great size and its thick walls, that drainage would never have been followed by a complete obliteration. It is apparent that the cyst wall could not have been dissected out.

The conclusion, therefore, must be reached that this was essentially an incurable case and that the permanent use of a tube would have been necessary. Nothing was found at the autopsy to account for the sac which occupied the body of the pancreas, and was probably a dilatation of the canal of Wirsung. A prominent feature in the history of the case is the rapidity with which the sinus closed after the removal of the tube. This has suggested to my mind the possibility, or the probability, that, in cases of pancreatic cyst previously reported as cured, the same condition has existed as in this case, and that the apparent cure was not real. The rapid healing of the sinus after the removal of the tube leads us to think that the cyst has been permanently obliterated.

It would be very interesting to follow the cases hitherto reported and to know whether there ever had been any recurrence. In the case reported a few weeks ago in the JOURNAL² there was still considerable discharge, and at my last visit, the very day I was called to Stoneham, I recommended the removal of the tube. In the light of my recent experience, I have advised the re-establishment of drainage.

One other point of interest in the surgical management of this case is the question of drainage at the second operation. I should have done this at the time if it had not been necessary to separate extensive adhesions between the colon, stomach and the omentum. It was not possible to do this without spending a good deal of time and without making a careful suture through the abdominal wall. This I should have done at the time had the patient's condition justified it. I thought it much better to abandon the operation and to drain the cyst by aspiration on the following day, if he survived the exploration, which did not seem likely. The drainage of the cyst with the needle, and the immediate subsidence of grave symptoms, seemed to me to show that they were due, probably, to pressure. The fact, however, that the relief of pressure was not followed by recovery seems to me sufficient evidence that the case was essentially an incurable one, and that the conditions then existing could not have been relieved by any operative method whatever.

THE NEW UNITED STATES COINS.—It may be useful to know that the new coins are made to weigh definite amounts according to the metric system, and may consequently be used in one side of the scales. The half-dollar weighs twelve and one-half grammes, and the dime two and one-half grammes.

² Vol. xxvi, No. 4, p. 28.

FORCIBLE STRAIGHTENING FOR PERMANENT FLEXION OF THE KNEE.

URETHRAL STRICTURE, WITH A COMBINED INTERNAL AND EXTERNAL URETHROTOMY IN THE SAME CASE.

REPORTED BY JOEL E. GOLDFWAIT, M.D.,
Former House-Surgeon at Boston City Hospital.

THE following case is of interest, particularly, as it illustrates a new and very satisfactory mode of treatment for deformities of the leg resulting from chronic rheumatism. The patient was treated at the Boston City Hospital, and was under the care of Dr. E. H. Bradford and Dr. Abner Post. I am indebted to these gentlemen for permission to report the case.

P. C., thirty-four years of age, entered the Boston City Hospital March 18, 1890, upon Dr. Bradford's service. He gave the following history: Since boyhood he had been subject to attacks of acute articular rheumatism; at the age of seventeen, after an attack of gonorrhœa, the rheumatism, which had been quiescent for two or three years, became more severe; and from this time on he has had frequent attacks of gonorrhœa, each time followed by an exacerbation of the "rheumatism." Five years ago, after a fresh attack of the urethral trouble, the pain and swelling in the knee became unusually severe. From this he was a year in recovering, and at this time the deformity of the leg, which is present, occurred.

At the time of entrance to the hospital, the left knee was flexed to nearly a right angle, the tibia was subluxated backwards and rotated outwards. There was very little motion possible, and this was very painful. The foot of the same side was fixed in the position of extreme valgus. There were also strictures in both the deep and the anterior urethra.

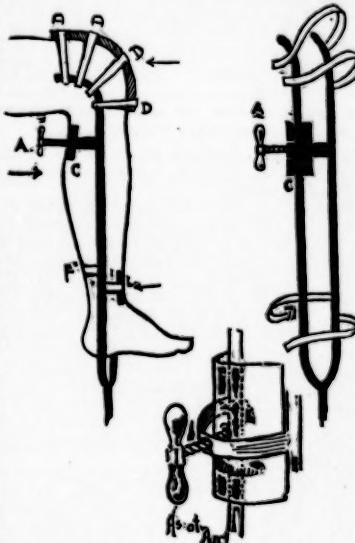
One week later Dr. Bradford operated. (In the interval the patient had been kept in bed, with extension to the leg.) The adhesions in both knee and ankle were broken up, and the leg brought into as good position as was possible by manual force. The subluxation of the tibia, however, could not be corrected. A plaster-of-Paris bandage was applied. Following this, the patient had a great deal of pain in the knee; he was obliged to remain in bed for four weeks, and even then could move about but little with the aid of crutches and the plaster bandage.

On the 23d of May a combined internal and external urethrotomy was done by Dr. Post, who was then on duty. From this the patient made a good recovery; the catheter was removed on the next day and the urine came in drops from the wound for about two weeks. At this time the pain in the knee became much more severe than usual.

Two months later, the pain in the knee still remaining, more radical operative procedure became necessary. He himself demanded amputation if relief from the incessant pain could not be obtained in any other way. On July 29th Dr. Post operated. After the adhesions were broken up, the genuclast devised by Dr. Bradford was applied; and, with the use of a great deal of force, the subluxation was corrected, the leg straightened and done up in plaster-of-Paris. (This apparatus which was not to be had at the time of the first operation is shown in the following illustration.)

Its construction and mechanical principles are apparent. When it is applied and the leg straightened, the straps D press the femur back while the screw-pad C forces the tibia forward.

After this operation, or after the bones were once in place, the pain ceased, only one dose of morphia being necessary, whereas formerly it had been used very freely. In one week the patient was up about the ward; and on the tenth day he was discharged, using crutches and wearing the plaster bandage.



Since then he has done well. When last seen, about six months ago or over a year from the time of operation, he was at work, wearing a Thomas caliper brace-splint, with a strap over the knee to prevent a recurrence of the deformity. Even without this splint he is able to walk very well, and is free from pain.

The case is of interest particularly, aside from the history in which gonorrhœa is so mixed up with the joint condition and urethral trouble, as it shows the possibility, by means of such an apparatus, of offering the patient a useful leg, whereas otherwise amputation would have been the alternative. The cessation of the pain is also noticeable, immediately after breaking up the adhesions and restoring the bones to their proper positions.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

STATISTICS OF ANESTHESIA.

GURLL'S¹ report is an analysis of the observations of the members of the Deutsche Gesellschaft für Chirurgie made between July 1 and December 31, 1891, and are founded on the data contributed by sixty-

¹ Arch. f. Klin. Chir., 1891, Bd. xlii, 2, p. 282.

six members. The total number of cases where anesthesia was produced was 24,625.

22,636 Cases Chloroform	71 Cases Asphyxia	6 Deaths
476 Cases Ether	0 "	0 "
1,035 Cases Chloroform and Ether	5 "	0 "
417 Cases A. C. E. Mixture	4 "	0 "
27 Cases Bromo-ethyl	0 "	0 "

These figures show one death from chloroform in each 3,776 cases, and severe asphyxiation once in every 319 cases. It is difficult to form an opinion from them of the comparative fatality of ether, but a good knowledge of the death-rate from chloroform is shown by this investigation.

THE ADMINISTRATION OF ANÆSTHETICS IN ORAL AND NASAL SURGERY.

As anæsthetist, Frederick Hewitt of the Charing Cross and Dental Hospitals, London,² has developed the following points:

Ordinarily, it is best to anæsthetize the patient with ether and to continue the anæsthesia with chloroform, care being taken not to make the substitution until the patient begins to show signs of emerging from the ether narcosis. The advantages of the ether are: (1) It is possible to fill the patient with such a quantity that for many operations it is not necessary to add more than to produce profound narcosis. (2) There is no objection to having the patient's head elevated or even to the sitting posture. (3) Should any difficulties dependent upon the presence of morbid growths, etc., in the nose or mouth arise during the administration of ether, there is not that liability to circulatory depression which exists during the use of chloroform under similar circumstances.

When considerable bleeding is anticipated, one of two positions should be chosen, if possible: (1) The etherized patient should be slowly raised into the sitting posture and his head and shoulders thrown well forward; or (2) he should lie on his side with arm under him and, his head being near the edge of the table, his face should be directed downward, the mouth being well opened by some form of gag in either case.

ASEPSIS IN THE BERGMANN KLINIK.

A recent report by Schimmelbusch³ describes the methods used at Berlin for aseptic work. Among the statements made, the importance given to cleanliness by mechanical means that is, scrubbing, washing, etc., is striking. It is sufficient for the most obstinate hardened spore or coccus. Physical sterilization, that is, by steam, hot air, or boiling water, is preferred to chemical antiseptics. For instruments, boiling for five minutes in a one per cent. soda solution is claimed to prevent rusting and to be perfectly effectual. The soda increases the disinfecting power of the boiling water, and the boiling soda solution is the most powerful disinfecting agent which one can use in practical work. For detail the reader is referred to the original article. Brushes are disinfected by soaking in a one-half per cent. aqueous sublimate solution, unless strongly infected, in which case they are boiled.

THE TREATMENT OF ERYSPIELAS.

From an interesting paper by Charles W. Allen⁴ of a personal experience in fifty cases of erysipelas, he suggests the following plan of treatment:

¹ London Lancet, and Annals of Surgery, vol. xiv, No. 5, November, 1891.

² Arch. f. Klin. Chir., 1891, xlii, 1, p. 123.

³ American Journal of Medical Sciences, July, 1891, p. 51.

First, internally, such systematic treatment as the nature of the case seems to require. Antipyretics only in case of high or persistent fever (over 103.5° to 104°). Then antipyrine in doses of at least fifteen to twenty grains, for an adult, guarded by alcohol. Cooling drinks. Calomel or saline aperients in full dose if constipation. If much weakness, alcoholic drinks given freely, especially at critical periods, and iron or iron and quinine; digitalis, if much fever and prostration; bromides for delirium; antipyrine or phenacetin for headache, with cold applications to the head, and as concentrated and nutritious a diet as possible.

Second, locally, I would paint the patch and surrounding margin of healthy skin thickly with ichthyol in collodion, one drachm to two drachms to one ounce. If the scalp is the region affected, a watery solution or ointment of ichthyol can be employed. To arrest the spread I should in every case make an attempt, either with the band of adhesive plaster, or scarification, or both, the latter to follow the former, in case the disease spreads beyond the adhesive strips. In erysipelas of the face which had not yet reached the forehead, or at least its upper part, I would apply a band tightly about the forehead and just above the ears, cutting the hair in a strip around if necessary to secure firm pressure. The chances of arresting the process here should be at least equal to those of checking the spread upon an extremity, for we have a hard, bony base over which to make our compression. If the boundary is passed, then I should at once have the scalp shaved and apply another band higher up. The hair should be cut in any case in which the scalp is invaded or threatened. Then the same application of ichthyol in collodion can be made, as to the face or other part. If there be much tension, swelling, heat and discomfort (which is not apt to be the case under collodion) any oily substance can be applied over it.

DIAGNOSTIC VALUE OF PUS COCCI IN THE BLOOD.

A. von Eiselsberg claims that the demonstration of the presence of pus microbes in the blood by culture (*streptococci pyogenes*, *staphylococci pyogenes aureus*, *staphylococci pyogenes albus*) indicates also the presence of a suppurative process; and that in doubtful cases he has thus made the diagnosis of septic infection of operation wounds, osteomyelitis, hip-abscess, etc.⁵ He does not think that failure to find such pathogenic microorganisms by culture, proves the absence of suppurative processes.

THE PULSE AS AN INDICATION FOR LAPAROTOMY.

G. H. Burrell's article⁶ on the value of the pulse-rate as an indication for laparotomy in cases of acute traumatic peritonitis is being quoted in European journals. Burrell stated that in such cases where there was no special rise of temperature, a pulse-rate of 120 or over per minute, was an indication for an exploratory laparotomy. The value of the pulse-rate as an indication for operation in cases of appendicitis was suggested by J. W. Elliot of this city, several years ago.

MENINGOCELE SPURIA TRAUMATICA.

A case representing this affection at Czerny Klinik has led Bayenthal to investigate this lesion.⁷ His pa-

⁵ Wien. Med. Wochenschr., 1890, iii, 28.

⁶ Lancet, 1890, i, p. 356.

⁷ Beitr. z. Klin. Chir., 1891, vii, 367.

tient was a boy, aged seven. The tumor was noticed two days after birth. Delivery instrumental. Site, left parietal region. Tumor soft, size of a bean when first noticed; growth corresponds to growth of body. Pulsation synchronous with heart. Crying, coughing, etc., causes tumor to increase in size. It is surrounded by a bony ring, the edge of the adjacent bone. Strong compression causes symptoms of cerebral compression, that is, loss of consciousness, dilated pupil, deep and prolonged respiration, convulsions, etc. Bayenthal has found twenty-one cases, including eight autopsies. It is an affection of infancy, not of adult life. Conditions: (1) A thin skull; (2) adherent dura; (3) deficient calcification. Symptoms: First, of concussion; then appearance of tumor contents, at first blood, later (after a few days) cerebro-spinal fluid. Rate of growth and size of tumor varies much. It may be rapid and continuous, or slow, or after attaining a certain size, remain stationary or diminish or disappear. Prognosis: Bad with rapid growth; seen in cases where there is communication with the ventricle. Slow growth good; growth ceases sooner or later since no such communication. Site: In most cases the parietal bone and generally the right. No change, as a rule, in the superadjacent tissues except thinning and rupture of skin in very rapid growths. Contour generally round or elliptical. Pulsation, respiratory disturbance, the surrounding thickened bony edge, fluctuation, possibility of reduction, participation of cerebral tissues, are discussed in detail in the original article. Diagnosis generally easy. To be distinguished from cavernous angioma, bony defects of skull, congenital hernia cerebri, blood cysts of skull connected with the longitudinal sinus, soft sarcoma of the dura which forms a pulsating tumor after perforating the skull. Prognosis: As regards recovery, always unfavorable; as regards life, guarded, uncertain. Treatment, none satisfactory or effective known.

PNEUMATOCELE SYNCIPITALIS.⁸

This rare affection is again brought to notice by C. v. Helly⁹ (Graz), who reports a case and discusses the etiology, condition, frequency and treatment of this disease. He states that it is an air-containing tumor between the skull and periosteum. The source of the aerial contents is from the air-containing cavities of the skull; the contents, atmospheric air. Hence a communication with such an air-cavity through the bone is necessary to the existence of such tumors. These communications are congenital defects or foramina; abnormally thin bone, solution of continuity from trauma, and the effect of inflammatory processes in the cavities above mentioned or of its bony walls. Helly has collected reports of seventeen cases where the tumor was occipital. Those where the frontal sinus is the source, are, on the contrary, seldom seen. He finds record of eight cases and his own makes nine. This was in a patient aged twenty-eight, cause, a kick from a cow. Loss of sight in right eye. Five years after, subsequent to a discharge of sequestra from the nose, the pneumatocele appeared in the left frontal region. Of Helly's nine cases of anterior pneumatocele the youngest was in a patient aged twelve years. He claims that the frontal sinus does not exist before the age of ten. Etiology: Trauma, three; syphilis,

one; empyema of the frontal sinus, four. In some cases the air must pass through congenital foramina in the frontal bone or mastoid, or such openings are enlarged by inflammatory processes. Helly found such congenital openings in the anterior wall of the frontal sinus in four among 474 skulls examined. There were frequently foramina for the transmission of vessels. The diagnosis is usually easy. The tumor is tympanitic. The frontal tumors are never so large as the occipital. Treatment: In three cases puncture was without result; compression can be used where pus is absent. The surest method consists of free division of the wall and healing by granulation.

EXTIRPATION OF LARYNX AND PHARYNX.¹⁰

In October, 1889, K. Poulsen (Copenhagen) performed this operation for carcinoma. The pharynx was also involved in a zone which did not extend below the cricoid cartilage. The growth was throughout the larynx. Preliminary low tracheotomy was done; then a sub-hyoid pharyngotomy, through which the limits of the growth were ascertained by digital exploration. A vertical skin incision was then made from the mid-point of the pharyngotomy wound to half an inch of the tracheotomy incision, then continued downward by two smaller lateral cuts.

The two quadrangular flaps then formed, were dissected back laterally to the sternocleidomastoid muscles. The muscles of the larynx were separated with blunt instruments, also the pharynx from the vertebrae. The pharynx was divided one centimetre above the growth, the oesophagus one centimetre below it, the trachea below the cricoid cartilage. No especial bleeding. The skin flaps, including the pre-vertebral connective tissue were united in the median line with silk sutures. The upper and lower edges of the flaps were sutured to the posterior edge of the divided pharynx above, and the oesophagus below; a tube was passed through the nose down into the severed oesophagus. Wound plugged with iodoform gauze. The wounds healed, and a new posterior pharyngeal wall resulted. The tube was removed after a few days, but passed subsequently three times daily for feeding the patient.

Three weeks later the anterior pharyngeal wall was formed by a flap from each side by aid of one vertical and two horizontal cuts. The flaps were turned in and sutured together in the median line — raw surface exposed. Their upper border was sutured to the anterior edge of the pharynx. Their lower to the anterior edge of the oesophagus. The patient could at once swallow liquids. After three or four days a small opening formed from gangrene of a small area next the oesophagus. This, when tamponed, did not interfere with feeding. The patient died from septic pneumonia (seven weeks after the first operation). Autopsy showed a new-formed pharynx, six centimetres long and nine centimetres in circumference; epidermis intact, and beginning to assume the appearance of mucous membrane.

SHOCK ACCOMPANYING EXTIRPATION OF THE LARYNX.

Alpiger¹¹ (Vienna) reports an interesting and valuable investigation made by him to explain a sudden heart paralysis and death in a healthy man, aged fifty-

⁸ See Surgical Report, Boston Medical and Surgical Journal, 1890, vol. xxii, 247.

⁹ Arch. f. Klin. Chir., 1891, xli, 685.

¹⁰ Centbl. f. Chir., 1891, No. 1.

¹¹ Arch. f. Klin. Chir., 1890, xi, 4, p. 761.

six, from whom Billroth had extirpated the left half of the larynx for carcinoma. The case apparently was explained by the discovery of an anastomosis between the external branch of the superior laryngeal and the superior cardiac branch of the sympathetic. He assumes that this anastomotic branch may contain cardiac depressant fibres, possibly from its connection with the superior laryngeal nerve. However, the practical point for the surgeon is that the danger exists; and since the nerve is more frequent on the left than the right side, left-sided operations are to be considered more dangerous. For a detailed anatomical description the reader is referred to the original article¹² or a good *résumé*.

THE RESULTS OF REMOVAL OF THE BREAST.

Terrillon,¹³ has arrived at the following conclusions as a result of partial or total removal of the breast in one hundred patients, in the treatment of tumors of various kinds:

The gravity of the operation is insignificant; recurrence seems to be the rule when the axillary glands are involved in the disease; when mammary tumors are malignant, or of a mixed character, the entire gland and involved lymphatic glands should be removed if recurrence takes place. The operation may be repeated once or several times, especially if primary union of the skin can be secured; by this means the condition of the patient is ameliorated, the drain attending ulceration is obviated, and the unfavorable course of the disease seems to be retarded.

TREATMENT OF TRAUMATIC PNEUMOTHORAX.

Witzel¹⁴ successfully relieved a case of this nature, which forms such a dangerous complication in wounds of the thorax by impeding respiration and pressure on heart and large blood-vessels, by placing a catheter in the upper angle of the wound, then suturing the opening till air-tight; then filling the pleural cavity with warm boric acid solution, which gradually displaced the air, which escaped through the catheter. The liquid then was removed by siphoning it out through the catheter. After this procedure respiration became quiet and regular, and percussion and auscultation showed normal conditions.

REMOVAL OF THE APEX OF THE LUNG FOR TUBERCULOSIS.

Dr. Tuffler,¹⁵ in a case of early tuberculous disease of the apex of the right lung, resorted to an operation. A simple incision was made through the second intercostal space anteriorly; the parietal pleura was divided, which induced a kind of sub-pleural pneumothorax; the apex of the lung became reduced in bulk sufficiently to be easily drawn through the wound; it was then cut away by the excise, and the stump sutured to the intercostal incision to prevent retraction of the lung. The case progressed very favorably after the operation.

(To be continued.)

THE KING of the Belgians has consented to be Patron of the International Congress of Gynecology and Obstetrics, which will meet this year at Brussels.

¹² Schmidt Jahr. f. gesamt. Med., 1891, No. 3, p. 396.

¹³ Bulletin Gen. de Therap., May 15, 1891; Medical News, July 11, 1891.

¹⁴ Centbl. f. Chir., 1891, No. 28.

¹⁵ Gazette hebd. de Sci. Med.; Medical News, September, 1891.

New Instruments.

AN IMPROVED APPARATUS FOR ESTIMATING UREA.

BY H. F. ADAMS, M.D., PHOENIX, ARIZONA.

THE convenient hypobromite process has called out numerous devices to make the quantitative analysis of urine for urea at once handy and rapid.

Those of Marshall,¹ Green, Doremus² and Squibb³ are perhaps the best.

The modification figured below, possesses, I believe, the following advantages:

(1) It is inexpensive. It is easily made from ordinary glass tubing with a common alcohol lamp.

(2) It reduces the cost of analysis, requiring only about one quarter of the amount of caustic soda and bromine needed by others.

(3) It is neater to use and easier to clean. Neater to use, because it can be filled and operated without soiling the fingers, and because of the small amount of caustic solution to overflow; and easier to clean, because the apparatus is of uniform calibre, and rinses easily.

(4) It is of superior accuracy: first, because of the small calibres of the urine-pipette and of the nitrogen-receiver, thus giving very close readings; second, because of the adjustment of the urine-pipette, and of the absence of any waste or error in adding the urine, as often happens with the usual pipettes; third, because of the long column of hypobromite solution, favoring a rapid and complete decomposition of the urea as the urine rises.



The ureometer is made from glass tubing having a little more than a quarter-inch bore. It is fifteen inches long, closed at one end, and curved at the other for about three inches, with a radius of one inch. It holds, filled, about seventeen cubic centimetres, and is graduated from the closed end in cubic centimetres. It is best filled with the sodium hypobromite solution by means of a long pipette, with a small delivery, which easily takes the solution from a bottle and prevents any spilling.

The urine is added by a pipette made of very small glass tubing curved to the same radius as the large tube. This curved pipette is long enough to contain

¹ Tyson's Pract. Exam. Urine, 7th Edition, p. 156.

² The Medical News, May 30, 1885.

³ Ephemeris, January, 1891.

something more than one-half cubic centimetre, and is graduated to that amount. It is attached by a short piece of rubber tubing to an ordinary medicine dropper. This attachment allows the analyst to take up a little more than one-half cubic centimetre of urine, and then to adjust exactly to that quantity without touching the bulb.

The pipette thus loaded is introduced into the tube full of hypobromite solution, exactly as a male catheter is passed. The pipette should have a very small delivery, allowing a very slow discharge of the urine. The overflow of the caustic solution is caught in a beaker. The tube may be sunk in a vessel of water to the level of the remaining liquid, in order to correct the pressure, before reading the amount of nitrogen.

The solutions used, and the calculation of the result, are according to the usual standards. Each cubic centimetre of nitrogen is nearly the product of 0.00282 grammes of urea; or, each 1% of urea, in the 0.5 c.c. of urine used, gives 1.77 c.c. of nitrogen. From these figures it is easy to graduate the tube so as to read the percentage of urea without calculation.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, February 8, 1892, the President DR. FREDERICK I. KNIGHT in the chair.

DR. J. C. WARREN read a paper on

THE OPERATIVE TREATMENT OF GOITRE.¹

Dr. Warren: Cretinism is etiologically and pathologically a different disease. Superficially the two diseases resemble one another very much. There is in both a disturbed look about the face, feeble mental condition, imperfect action of the organs of sense, etc. Here the resemblance ceases. In the case of myxedema the distortion is due to the condition of the tissues. In cretinism the distortion is due to the shape of the bones. The widening of the face, of the eyes, peculiar distortion of the head, are characteristic of cretinism, and due probably to the condition of the skeleton rather than of the soft tissues. The connective-tissue is the one chiefly affected in the myxedema cases. The condition of mind in the myxedema cases is not necessarily as bad as one might suppose. They are slow of thought, but they appear to have more or less intellect and do not seem to lose their intelligence. Their movements are slow.

DR. RICHARDSON: This paper has been very interesting to me. I am sorry to say that I have no experience in the entire removal of thyroid tumors. Case I, was under my observation some weeks in the summer, and I did not operate because I did not think that the tumor was large enough to cause any inconvenience except from its unsightly appearance. I was very sorry afterwards that I did not operate when I learned the nature of it. It always seemed to me a very formidable operation. I dare say it is not so difficult as it seems. The position of the inferior thyroids and their relation with the recurrent nerve makes it very important to avoid that nerve. Dr. Dwight had

a large number of observations made to show that relation in the dissecting-room, and I think he found that the nerve generally went behind the artery, although that is not constant. It seems to me to avoid the recurrent nerve you need to keep well away from the trachea and osophagus, because unless the tumor is very low down indeed the nerve is there between the two. I have had quite gratifying results in the treatment of cystic tumors by drainage, and one case in which it was necessary to insert a tube into the trachea through a very large malignant growth, perhaps one of the most difficult operations. In the cystic variety, Dr. Warren may remember the old man who came a year ago with an enormous thyroid tumor. This I succeeded in curing by drainage. I think, if we can find that it is possible to remove thyroid tumors with safety and without the serious after-effects, that we shall have opened a very great and interesting field in surgery, which thus far has been very little explored in this vicinity.

DR. MIXTER: I was fortunate enough to see a very considerable number of these cases in Billroth's ward in Vienna; and a very large number were operated on, some being what were supposed to be total extirpations, but others partial, and there were also a large number treated by the injection of iodine and other substances, so that I had a very considerable number of cases to watch in all the different stages, and also had the privilege of making sections of all the growths removed, and I have now specimens from all the thyroid tumors I believe that were removed for a considerable number of years in Billroth's clinic. There are a number of points that come up in the paper, and the first is the position of the thyroid tumor in its relation to the trachea and the osophagus. Generally the compression Dr. Warren says is from the side, but I have seen, in at least two cases that Billroth removed, where the trachea seemed to be encircled by the enlarged thyroid, in other words, where, instead of passing across, the tumor extended directly round the trachea and the osophagus, completely encircling it, and of course in that position the operation was very much more difficult, the trachea and the osophagus being completely separated. In those cases I think the recurrent laryngeal nerve was generally exposed and sought for and found before the operation was carried to its completion. The injection of iodine I saw in a good many cases and with very varying results. In some cases the tumor was rapidly diminished, and in other cases, as a rule, a swelling following the injection, and then a diminution in size which carried it down to a considerable point below where it stood at the time of the injection. In other cases, after this inflammatory process had apparently subsided, the tumor would grow much more rapidly, and in these cases it was invariably removed; and in a large number of these cases I believe the growth was found to be sarcomatous. In the ordinary cystic tumor it was very generally quite successful, but I have one tumor that was removed, in which this injection had been made a large number of times and at different points. You can see the cicatrices and shrinking following, and there is one point showing the inflammatory process following the injection.

The paralysis of the recurrent laryngeal has been spoken of, and that is a very important thing to avoid. In some of these cases it was rather startling to find that there was this paralysis, but in all these cases it was temporary. In some of the malignant cases these

¹ See page 433 of the Journal.

nerves being pulled upon, I suppose, were temporarily paralyzed; but in all cases the patient recovered inside of a week. It would be noticed immediately after the patient came out of the chloroform, so that in case you find you have the symptom it is not necessary to suppose you have cut the recurrent laryngeal.

There is the danger of sudden suffocation in these cases, and it is well in all cases to have every possible instrument at hand for catheterizing or intubating the larynx or performing tracheotomy. I have seen a tracheotomy tube put through three or four inches of malignant growth where breathing had suddenly stopped.

These cases that Dr. Warren reports are of practically one type, the cystic type, with larger or smaller cysts, the bronchocoele. In Vienna I saw a large number of sarcomas of the thyroid, and several carcinomas. The sarcomas are very rapid in growth, and in all that I saw the recurrence was very rapid, and death took place in each case.

I saw none of these cases of myxedema at that time. I remember it was denied that it was so, and evidently, in those cases where myxedema did not follow, it was because the whole gland had not been removed.

DR. WHITNEY: An attempt has been made to divide the goitres into different classes, such as the hyperplastic, colloid and cystic form. But in all the process is essentially the same, the variation in the relative amount of these *cystic materials* giving the name; as all can usually be found in the same specimen.

For transplantation a modification of the Mixter punch might be used, in which the end opposite to the punch is sharpened to a needle-point. A piece cut out with the punch from one patient, the instrument turned round and the needle-point introduced at the desired place in the second.

DR. J. P. CLARK: In reviewing the recent literature on the thyroid gland, for a certain publication, I have seen several reports of cases of myxedema in which the thyroid gland of a sheep has been transplanted either into the abdominal cavity or beneath the breast. The immediate effect on the myxedema has been excellent, but unfortunately in, I believe, all the cases so far reported, the gland becomes absorbed after a longer or shorter period, and the symptoms return. George R. Murray has reported recently, in the *British Medical Journal*, a case of myxedema which showed marked improvement from the occasional subcutaneous injection of a perfectly sterile extract of a sheep's thyroid.

DR. WARREN: There is one case Dr. Otis kindly sent to me, of a tumor of the thyroid in a girl sixteen years of age. It had been growing rapidly for a few weeks, presented all the outlines of goitre, and was motionless on deglutition, went down apparently into the mediastinum. Its rapid growth and the somewhat cachectic appearance of the patient caused him to advise against thyroidectomy. It is a case I would like to study a little more before making a diagnosis. It seemed to me like a malignant type of the disease of which we have occasional examples here. I have seen a number that were distinctly malignant.²

DR. A. COOLIDGE, JR., reported

THREE CASES OF TUBERCULOSIS OF THE PHARYNX.*

DR. S. W. LANGMAID: I remember many of these cases distinctly and the various ways in which they

* I have since learned that the patient is in a very feeble condition and at times delirious.

² See page 437 of the Journal.

were treated. When the disease is primarily manifested in the skin it is very easy to make the diagnosis, but when it first appears in the nose it is very difficult. It is almost impossible to discriminate between that and syphilis. When it exists in the mouth and palate I do not think it could ever be mistaken for syphilis by one who had had much experience in syphilitic lesions of the mouth. I have never seen but one case in which there was not a manifestation sooner or later on the skin, and I believe that was the only case in which the manifestation did not precede the manifestation in the nose. In that case a very excellent cure was effected which has lasted about two years.

With regard to treatment, I myself have had so little experience that I should hesitate to recommend any particular form of treatment, but I do think that the application of escharotics preceded possibly by curetting will in a certain number of cases yield good results. In the case to which I have referred as being cured, the application of an acid solution of nitrate of mercury seemed to be the most efficacious. I applied it to the nose, mouth, tongue and even to the larynx. It was in no case followed by extensive inflammation or swelling. I was at first very cautious in my applications to the larynx, but I soon became bolder, and it was very interesting to see how ulcerations healed under its application. I think I have a distinct recollection that the application was made in one or more of those cases Dr. Coolidge has reported as unsuccessful.

The fact that the disease has a tendency to spontaneous cure is an interesting one and may be some guide in prognosis. To be sure if the disease exists in the larynx it may result in a stenosis of the larynx, but the progress of the disease is very slow, and generally has cured itself as it were. I do not know enough about lupus on the skin to know whether that is generally the case in lupus of the skin. Dr. White can inform us with regard to that.

It is very singular that up to within a few years so few cases were reported. Very many cases have been reported of scrofulous ulcers of the mouth and pharynx. What those cases are I myself do not know. I have never seen one. All I have ever seen have been tuberculous, syphilitic, lupus or one case of pemphigus. It seems to me likely that the so-called scrofulous ulcers of the mouth and pharynx reported by the French must have been either those of lupus or of tuberculosis.

It has been said that in the large proportion of cases of tuberculosis of the skin if the lesion was sought for in the mucous membrane it would be found there, and I think it is. Braun, of Vienna, who gives an account of such a study being made, and that in a certain per cent., the mucous membrane was found to be the seat of lupus. The reason it is not discovered is because the disease is so painless in its progress and because it causes so little inconvenience. If it goes into the larynx there may be some hoarseness.

It did not seem to me that these cases which Dr. Coolidge has reported were all of the same type. The appearances varied a good deal. While we had the superficial ulceration, with the ulceration in the region of the teeth with here and there raised masses, lupus nodules, still there was a very great variety in the appearances of these three cases which I believe to have been all of the same kind.

Primary tuberculosis of the pharynx is rare. Lupus is probably common. That assists in the diagnosis.

With regard to treatment again, it seems to me that about all means have been exhausted. This one Dr. Coolidge speaks of, the extraction of the teeth, is entirely new so far as my reading goes and my experience, and is worthy of consideration. I do not see why it should cure the disease, but it seems in all of these cases to have been of great benefit and the removal of a portion of the upper jaw seems to have resulted in almost cure, that is, there has been no return of the disease after nine months.

DR. J. C. WHITE: I have little to say about tuberculosis of the mucous membranes for I have no experience with the appearances or treatment of that affection. I would like to make one or two comments on what has been said. The writer speaks of some of these affections of the mucous membrane in the cavity of the mouth and throat as being lupus and of others as being tuberculosis, as though they were distinct clinical forms, but I think that the course of these cases and the diverse lesions as he described them are only examples of the great multiformity of one process and that they confirm one in the opinion that we must abandon these terms: lupus, tuberculous and scrofulous disease as representing distinct anatomical processes, and that they must be all called forms of tuberculous, or tuberculides, as the French would like to call them.

The writer spoke of certain scrapings having been examined for the presence of bacilli and of the failure to find them; negative evidence of that kind is of little value. Leloir, who has extensively studied the different forms in the skin, expects to make eighty sections on an average to find one containing bacilli, so sparse is the growth of the bacillus in the ordinary forms of clinical lupus. Of course there are other forms of cutaneous tuberculosis in which you find it much more abundant.

I think we should abandon these various terms and speak of all forms as tuberculous. In the few cases I have seen in the throat-room I should not be able to state why one of them should receive the name lupus and another tuberculosis by any distinguishing appearance I could recognize.

DR. T. A. DEBLOIS: I had the privilege of seeing Dr. Coolidge's second case. I suppose I may have had cases of lupus myself, but always called them tuberculosis. If lupus is slow-acting tuberculosis, I have one now which has not progressed for five months. There is a lesion of the tongue and larynx. It is easy to watch the progress of the spot on the tongue. I have used escharotics, lactic acid regularly.

I have had cases of dissecting tubercular disease of the mouth and hard palate, but they were very rapid in their progress, and I have always spoken of them as tubercular ulceration of the mouth. I never had a case in which the nose was involved, except secondarily from propagation through the hard palate.

DR. GEO. B. SHATTUCK: My only connection with the case was in treating her with tuberculin, and the results of that were extremely unsatisfactory. She was the least satisfactory patient I had in that treatment. She was unsatisfactory generally and unsatisfactory locally. She reacted locally, as Dr. Coolidge has said, but she did not improve and she did not gain generally as most of the other patients did. She had the usual treatment I gave, namely, from one-half up

to fifteen or sixteen milligrams at intervals of two or three times a week. I think she was under treatment five to six weeks and went away because there was no improvement.

DR. KNIGHT: Dr. Coolidge has referred to a case of mine which I published some years ago, at a time when I attempted with others, to draw a distinction between lupus and tuberculosis, and in thinking over that case and others since the discovery of the bacillus it has seemed to me that the most probable explanation of the different appearances in those cases, as we tried to make it, might be fairly due to the fact that in the cases we classed as lupus the progress of the disease was slow, particularly on account of the non-complication of pulmonary disease, that in those cases which we had been in the habit of pronouncing as decided tubercular, there was the disease of the lung which gave us the confirmation, and that disease of the lung debilitated the patient and necessarily hastened the progress of the disease. In those cases in which it happened to be found only in the throat, the disease was slow as it is in the skin and in that way we got that proliferation of tissue and extensive thickenings which we failed to get in the cases having also tubercular disease of the lungs, which are of short duration.

It always seemed to me that a good many of those cases of so-called scrofulous disease abroad, which are very hastily diagnosed, were probably cases of congenital syphilis.

DR. COOLIDGE: I am glad to hear Dr. White say that on the skin lupus and tuberculosis are merely different forms of the same thing, because it seems to me that in the throat and on the hard palate it is distinctly so. In these cases almost exactly the same appearance has been noticed as in cases which were distinctly lupus, and in cases in which there was nothing which suggested lupus. A similar lesion on the hard palate by extension on the nose and face has produced entirely different lesions, — one typical lupus and one that cannot be called lupus. The same is true in the throat. Entirely different looking lesions in the pharynx have been associated with the same lesion around the teeth.

DR. M. H. RICHARDSON described a case of

PANCREATIC CYST APPARENTLY CURED BY EXCISION
AND DRAINAGE; RECURRENCE, PERFORATION OF
THE STOMACH, DEATH, AUTOPSY.⁴

DR. WHITNEY: Cysts of the pancreas are almost all regarded as dilatations of the duct. Usually the sacculated form is the most common. Here we have dilatation of the middle part of duct with destruction of tissue, leaving the head and tail of pancreas intact.

As regards the formation of fistula, it has been noted that pancreatic fistulae are extremely rare. As a rule, when a communication has been established with the cyst, it readily closes. Perforations into the stomach and into the root of the mesentery are also mentioned.

DR. RICHARDSON: In Senn's article on this subject he reports a few cases, all he was able to collect two or three years ago; and I noticed that the most of them were of short duration, so that they may have recurred. From what experience I have had I believe that no cyst would close up. I do not believe any such cyst as this would ever heal. I do not see how it is possible for it ever to heal from the bottom.

DR. STEBBINS: I have here the ovaries taken from a Jewess, aged twenty-two. She came to the out-pa-

⁴ See page 411 of the Journal.

tient department complaining of pain in the pelvic region for a year or more. She was found to have a small tumor, about the size of an orange, on the right side. On removal, there was found to be a dermoid about the size of a small orange. The tumor was cut open this morning, showing a good deal of hair and some bits of bone and cartilage embedded in it. There is in the Fallopian tube another small cyst. The left ovary was found to contain a cyst smaller than the other, and on section fluid came out. At the fimbriated end of the Fallopian tube were several small cysts.

DR. COOLIDGE showed a piece of sponge removed from the nasal cavity of a patient, who gave the following history: Two years ago he had been etherized, and a polypus had been removed from his nostril. After the operation he found that the impediment to breathing was worse than it had been before; he therefore decided to change his physician. He has done so several times during the past two years. The sponge had evidently been put in to stop hemorrhage, and its presence was not suspected by the patient. The purulent discharge had existed for two years, during which time he had lost much flesh and became very anemic. After the removal of the sponge, the foul odor of the discharge disappeared within a week, and the patient already began to feel very much better. A foul discharge from one nostril only should always suggest a possibility of a foreign body, especially in children.

DR. KNIGHT: A few years ago a gentleman came to me from Newport, who had had a pretty severe hemorrhage from the nose. A physician had plugged posteriorly, but had forgotten to put on the string to the tail end of the plug, but pulled an enormous sponge as far as he could into the nose. The patient went about for three weeks from one to another, and no one got it out. I finally succeeded in breaking up the thing and getting it out anteriorly.

DR. MIXTER showed a stone he had crushed, weighing 900 grains. It was very hard. There was difficulty in grasping it even with the largest Bigelow lithotrite. It was three inches in length, and could not be grasped by its long diameter. The symptoms had lasted two years. The patient left the hospital at the end of a week, without a symptom of pain or discomfort.

Recent Literature.

Sleep, Insomnia and Hypnotics. By E. P. HURD, M.D. Detroit: George S. Davis. 1891.

This little volume is one of the Physician's Leisure Library Series. It contains about one hundred pages, and the title-page indicates the contents, each one of the three subjects of the title being the heading of one of the three chapters into which the book is divided. A concise statement of the physiology of sleep and the causes of insomnia prepares the reader for an intelligent, conservative and sensible consideration of the delicate question of hypnotics and their use. The author does not regard drugs as the most important therapeutic agents; though recognizing their uses, he thinks physicians should be very chary in prescribing the medicinal hypnotics, as many of them by constant or frequent use become positively baneful, and he closes the book with an exhortation to first try fully, when possible, all available hygienic resources before resorting to them.

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PRESENTATION OF PORTRAITS OF DR. OLIVER WENDELL HOLMES AND DR. ALFRED STILLÉ TO THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

A NOTABLE occasion in recent medical annals was the presentation of a portrait of Dr. Alfred Stillé, ex-President of the Philadelphia College of Physicians, and one of Dr. Oliver Wendell Holmes, an Associate Fellow, to that body. The former, the gift of the physicians of Philadelphia, was presented through Dr. H. C. Wood, and accepted on behalf of the Fellows by the President; the latter, the personal gift of the President, Dr. S. Weir Mitchell, was accepted by the Vice-President, Dr. J. M. DaCosta. The occasion was a dinner of the College of Physicians of Philadelphia, on the evening of the 30th ult., at which were present, besides the Fellows, a number of Associates and invited guests, including Drs. William H. Welch, of Baltimore, Hermann Knapp, of New York, and Wm. Osler, of Baltimore, and Talcott Williams, Esq., the entire number of those who sat down to dinner being nearly two hundred.

Both paintings were of life-size, in oil, half-length, and both excellent portraits. The portrait of Dr. Holmes represented the poet-physician in the black robe of the Faculty; it is the work of Mrs. Sarah Whitman, and is said to be the finest portrait of the genial autocrat that has ever been painted. There are many personal allusions in Dr. Holmes's poem referring to incidents during his attendance upon the second annual meeting of the American Medical Association, which took place in Philadelphia, and regarding which the President made a few explanatory remarks before reading his own contribution.

We venture to think our readers will condone the substitution of unpublished poems by the Doctor-Poet of Philadelphia and the Poet-Doctor of Boston for the customary editorials.

VERSES BY DR. MITCHELL ON PRESENTING THE PORTRAIT OF DR. OLIVER WENDELL HOLMES.

We call them great who have the magic art
To summon tears and stir the human heart,
With festive grief to bring the soul annoy,
And leave a dew drop in the rose of joy.
A nobler purpose had the Masters wise
Who from your walls look down with kindly eyes.
Theirs the firm hand and theirs the ready brain
Strong for the battle with disease and pain.
Large were their lives; these scholars, gentle, brave,
Knew all of man from cradle unto grave.
What note of torment had they failed to hear?
All grief's stern gamut knew each pitying ear.
Nor theirs the useless sympathy that stands
Besides the suffering with defenceless hands;
Divinely wise, their pity and the art
To teach the brain the ardor of the heart.
These left a meander for a nobler George;
These trod the red snows by the Valley Forge,
Saw the wild birth-throes of a Nation's life,
The long-drawn misery and the doubtful strife:
Yea, and on darker fields they left their dead
Where grass-grown streets heard but the bearer's tread,
While the sad death-roll of those fatal days
Left small reward beyond the poor man's praise.
Lo! shadowy greetings from each canvas come,
Lips seem to move now for a century dumb:
From tongues long hushed the sound of welcome falls,
"Place, place for Holmes upon these honored walls."
The lights are out, the festal flowers fade,
Our guests are gone, the great hall wrapped in shade.
Lone in the midst the silent picture stands,
Ringed with the learning of a score of lands.
From dusty tones in many a tongue I hear
A gentle Babel.—"Welcome, Brother dear.
Yea, though Apollo won thy larger hours,
And stole our fruit, and only left us flowers,
The poet's rank thy title here completes—
Doctor and Poet,—so were Goldsmith, —Keats.
The voices failing murmur to an end
With "Welcome Doctor, Scholar, Poet, Friend."

In elder days of quiet wiser folks,
When the great Hub had not so many spokes,
Two wandering gods, upon the Common, found
A weary school-boy sleeping on the ground.
Swift to his brain their eager message went,
Swift to his heart each ardent claim was sent;
"Be mine," Minerva cried. "This tender hand
Skilled in the art of arts shall understand
With magic touch the demon pain to lay.
From skill to skill and on to clearer day,
Far through the years shall fare that ample brain
To read the riddles of disease and pain."
"Nay, mine the boy," Apollo cried aloud,
"His the glad errand, beautiful and proud,
To wing the arrows of delightful mirth,
To slay with jests the sadder things of earth.
At his gay science melancholy dies.
At his clear laugh each morbid fancy dies.
Rich is the quiver I shall give his bow,
The eagle's pinion some bold shafts shall know;
Swift to its mark the angry Arrow-song,
Shall find the centre of a nation's wrong;
Or in a people's heart one tingling shot
Pleads not in vain against the war-ship's lot.
Yea, I will see that for a gentler flight
The dove's soft feathers send his darts aright
When smiles and pathos, kindly wedded, chant
The plaintive lay of that unmurred aunt;
Or sails his Nautilus the sea of time,
Blown by the breezes of immortal rhyme,
Or with a Godspeed from her poet's brain,
Sweet Clémence trips a-down the Rue de Seine.
The humming-bird shall plume the quivering song,
Blithe, gay and restless, never dull or long,

Where gaily passionate his soul is set
To sing the Katydid's supreme regret,
Or creaking jokes, through never-ending days,
Rolls the quaint story of the Deacon's chaise.
Away with tears; when this glad poet sings,
The angel laughter spreads her broadest wings.
By land and sea where'er St. George's cross
And the starred banner in the breezes toss,
The merry music of his wholesome mirth
Sends rippling smiles around our English earth.

"Not mine," Minerva cried, "to spoil thy joy—
Divide the honors, let us share the boy."

LINES BY DR. OLIVER WENDELL HOLMES ON THE PRESENTATION OF HIS PORTRAIT.

"How came I here?" The portrait thus might speak,
The crimson mantling in its canvas cheek,
"Here in this concourse of the grave and wise
Who look upon me with inquiring eyes,
As on some homeless wanderer, caught astray?
An error loci, Boerhaave would say.
Is this great hive of industry my home?
Where is the Common? Where my gilded dome?
Where the Old South? The frog pond? Most of all,
My sacred temple, Freedom's Faneuil Hall?"

No answer comes; no trick of human art
Can force those fixed, unmoving lips apart.
He whom the picture shadows must explain
This lawless inroad on a strange domain.
Were it my votive offering, meant to show
My grateful sense of all the debts I owe
To your fair city, its unlooked-for face
Might find no cavalier to dispute its place.
Yet though the friendly offering is not mine
It bears my benediction to the shrine
Where, if it meets a welcome, longer yet
Will stretch the column which displays my debt.
Friends of my earlier manhood, ever dear,
Whose lives, whose labors all were centred here,
How bright each figure stands before me now
With eyes undimmed and fair un wrinkled brow,
As when, with life before us yet untried,
We walked the "Latin Quarter" side by side
Through halls of death, through palaces of pain
That cast their shadows on the turbid Seine.

When o'er our coffee, at the old "Proeope,"
Smiling, we cast each other's horoscope,
Daring the future's dubious path to scan,
Gerhard, your *Gerhard* was the coming man.
Strong-brained, strong-willed, inquiring, patient, wise,
He looked on truth through achromatic eyes:
Sure to succeed, for Nature, like a maid,
Loves best the lovers who are not afraid.
Lends them her hand to lead them where they please,
And trusts them boldly with her master-keys.
Behold, unfading on the rolls of fame
Typhus and *Typhoid* stamped with Gerhard's name.

Look on the stately form at Gerhard's side.
He, too, shall live to be his city's pride.
Tall, manly, quiet, grave, but not austere,
Not slow of wit, a little dull of ear,
Him we predestined to the place he won,—
Norris, the Quaker City's noble son.
Armed with the skill that science renders sure
His look, his touch, were half his patient's cure;
What need his merits I should further tell?
His record stands; your pages know it well.

Still wandering, lonely, mid the funeral urns
To one loved name my sadening thought returns
Less to the many known, but to the few
A precious memory, — *Stewardson*, to you.

Through many a league we two together fared,
The traveller's comforts and discomforts shared,
When hills and valleys parted distant towns,
Long ere the railway smoothed their ups and downs.
In all the trials wearing days could bring
No fretful utterance ever left its sting :
Pity it was that, chased by pallid fears,
He walked in shadow through his morning years.
Talked of his early doom, and then, and then
Lived on, and on, past threescore years and ten.
Too shy, perhaps too timid, for success
He fought life's battle bravely not the less.
Others left prouder memories, none more dear,
For those a sigh, for Stewardson a tear !

Well, years rolled on, we went our several ways
Not unrewarded with our need of praise ;
Time took the weight and measure of our brains
Set us our tasks and paid us for our pains.
At length (our side-locks fast were turning gray)
He brought our art that-all-important day
When here our Esculapian Congress met
(Its second gathering, you will not forget),
With the crowd your far-famed city sought,
Pleased to behold the schools where Rush had taught,
Where Wistar labored and where Homer led
His thirsting flock to Surgery's fountain-head.

What kindly welcome with the rest I shared ;
A little pleased — perhaps a little scared,
When Chapman hugged me in his huge embrace
With praise that lit a bonfire in my face —
When Francis, guest at Mitchell's generous board,
My humble name across the table roared,
Coupled with one which figures on the roll
Of England's poets — bless his worthy soul !
Garth — good Sir Samuel, whose poetic spark
Scarce seen by day, still glimmers in the dark.
These flitting phantoms of the past survive,
While grateful Memory keeps her fires alive.
Friends of the days that fear and anguish knew,
My heart records a deeper debt to you.

To this kind refuge hallowed evermore,
Her shattered sufferers fond affection bore.
Full many a father tracked his bleeding son
Fresh from the murderous conflict, lost or won,
Strayed through some quiet ward, and looking round,
In pity's sheltering arms the lost was found.

Enough ! Enough ! these eyes will overflow
In sweet remembrance of the debt I owe —
A debt 'twould bankrupt gratitude to pay —
But Heaven, perhaps will hear me when I pray :
Peace to your borders ! Long may Science reign
Supreme, unchallenged o'er her old domain !
While sons as worthy as their sires of old
Her borrowed sceptre still unbroken hold
Till a new RUSH arise who dares to think —
An unborn LEIDY finds the missing link.

MEDICAL NOTES.

YELLOW FEVER IN BRAZIL. — The yellow fever in Brazil is reported to be further spreading from the Brazilian coast to the interior. The principal victims are said to be Germans, English, Swiss, Austrians and Swedes.

SMALL-POX IN ENGLAND. — Cases of small-pox continue to occur with disquieting frequency in various widely separated parts of England. Last week there were two deaths in London, one in Croydon, and one

in Halifax. There were, however, forty-eight cases in the infectious hospitals of the metropolis, and it is thought that the death statistics do not give a true idea of the extent of the present prevalence of the disease. Owing to the enforcement of the vaccination laws in the past, a large proportion of the adult population are more or less protected from small-pox.

A HEART AS A DRUG. — Two Tartars in the neighborhood of Kazan have been sentenced to twelve years' penal servitude for the murder of a little girl of six years of age. They cut out her heart to give it to a sick person to eat, as a human heart had been prescribed by a mullah !

FIRST AID TO THE INJURED IN THE FRENCH ARMY. — The French Minister of War has issued an order that henceforth every officer and every man in the French army shall, when on active service, carry on his person material for a first dressing in case of his being wounded.

NEW YORK.

ST. LUKE'S HOSPITAL. — The trustees of St. Luke's Hospital, at a meeting held April 25th, decided upon the general plans of the buildings to be erected on the new site between 113th and 114th Streets, and Amsterdam and Morningside Avenues. They also decided upon the names of five architects or firms of architects who are to be invited to compete in making the designs for the future hospital. They are to receive the sum of \$400 each for their plans; but the competition is not to be confined to these five, as any other architect is at liberty to submit plans if he so desire. Those who do so voluntarily, however, will receive no money. The buildings are to be fireproof throughout, with basements of stone, and the upper stories of brick, with stone trimmings. It is at present contemplated to provide accommodations for about 600 persons, including 100 nurses, and about one-tenth of the hospital space will be reserved for private patients. In each ward of the hospital there are to be twenty beds, with 1,500 cubic feet of air for each patient, and every ward will have its own dining-room, "quiet-room," private room for nurses, etc. There will be a large administration building, on the front of which is to be placed a statue of St. Luke in a niche, and beneath this tablet with an inscription referring to the former site of the hospital and to its founder, the Rev. Dr. Muhlenberg. The chapel is to seat an audience of 300, and to be easily accessible from the various wards, and the nurses' home will be a detached structure, fronting on 114th Street.

THE WEEK'S MORTALITY IN NEW YORK. — The week ending April 23d there were 901 deaths reported, which is 55 below the average of the corresponding week for the past five years, and represents an annual death-rate of 27.30 per 1,000 of the estimated population. There were three deaths from small-pox and two from influenza. In the week preceding there were nine deaths from the latter disease. On the 26th of April a man suffering from typhus fever escaped from

the Reception Hospital at the foot of East 16th Street, and notwithstanding the vigilant efforts of the health authorities he was not found again until three days had elapsed.

THE CHURCH HOSPITAL AND DISPENSARY. — A new charitable medical institution, under the auspices of the Protestant Episcopal Church, has just been opened on West 41st Street. It represents the union of several parish dispensaries for the more efficient carrying on of the work in their charge, and is to be known as the Church Hospital and Dispensary. The building occupies two city lots, and provision has been made for a large outdoor and distinct visiting service.

AT THE PASTEUR INSTITUTE. — A patient has been admitted to the Pasteur Institute who was recently bitten at Middleton, Mass., by a horse suffering from rabies contracted from the bite of a dog on April 4th, at Danvers. The horse subsequently died of the disease. This is the first case of the kind that Dr. Gibier had since he opened the Institute.

DEATH FROM APPENDICITIS AND ITS SEQUELAE. — In the case of Dr. Charles F. Clark, who recently died in Brooklyn, it was found at the autopsy that there was chronic appendicitis, with acute appendicitis super-induced and multiple metastatic abscesses in the liver, lung and kidney. The caput coli, which is usually held in position on the right side of the abdomen by the peritoneum and connective-tissue, was free, and had swung over to the left side.

Miscellany.

A PHYSICIANS' BUREAU OF SERVICE AND INFORMATION, AT THE WORLD'S FAIR.

A BUREAU of Service and Information, for the exclusive use and benefit of visiting physicians and surgeons and their families, with ample room for the successful operation of each department, and additional space for the use of the secretaries and other officers of medical societies and conventions will be established at the Columbian Exposition by Chas. Truax, Greene & Co. of Chicago.

A list of leading hotels and boarding-houses will be kept, with location, description and rates. A miniature post-office will be established, so that mail matter may be addressed to the bureau and also telegrams.

Telegraph, Telephone, Stenographic, District Messenger, Livery, Cab, Express, Baggage and Freight Service arranged for in the building and legitimate rates secured. Parcels and small packages will be received and checks issued for the same. A reading and reception room, with writing facilities and stationery, will be provided, where physicians may meet their friends, attend to correspondence, etc. Theatre, exposition, sleeping car and railway tickets will be secured, and assistance rendered in purchasing goods in all lines of trade. German, French, Spanish and other interpreters will be permanently located in the building.

These privileges will be granted to physicians and surgeons (and their families) only — college and date of graduation required on registration.

THE BACILLUS OF MEASLES.

CANON and Pieckle¹ have succeeded in isolating a bacillus which they consider the specific organism of measles. This bacillus was found in the blood in fourteen cases of measles. Organisms similar to those found in the blood were detected in the sputum and in the nasal and conjunctival secretions. They succeeded in making first cultures of the bacillus in bouillon, but the organism would not grow on the other media usually employed, nor could further cultivations be obtained from the bouillon. This bacillus is essentially different from the organisms previously suspected as being the cause of the disease. Its size is very variable, sometimes they are as long as half the diameter of a red blood-corpuscle, sometimes they are quite small, and have the appearance of diplococci; between these two extremes they show several gradations in size. Occasionally they are of extraordinary length, almost equal to the diameter of a red corpuscle. They are found in very variable numbers, one specimen of blood sometimes showing only a few bacilli, while in others the field was packed close with them. They frequently occur singly, but in the majority of cases they were arranged in larger or smaller clusters. They were found during the whole course of the disease, and in one case even three days after defervescence. As a rule, they were found most abundantly at the time of defervescence. The authors also examined the blood of seven children who had had measles just before, and in some of whom the rash had not entirely faded away, but the results were negative. Bacilli of the same shape as those found in the blood were seen in the expectoration, and in the nasal and conjunctival mucus of patients suffering from measles. The bacilli stain readily, but are not easily cultivated by any methods so far tried by the authors.

"BICHLORIDE OF GOLD CURE" DENOUNCED BY THE HAMPDEN DISTRICT MEDICAL SOCIETY.

At the annual meeting of the Hampden District Medical Society, held in Springfield, Mass., April 20th, the following resolution was almost unanimously adopted:

Whereas, according to common and newspaper report and upon information and belief it is known that a member of this Society and Fellow of the Massachusetts Medical Society in regular standing, has, by associating himself with one of the most notorious impostors of this century in the application and use of a remedy for the cure of inebriety called "bichloride of gold," and whose exact composition it is pretended is known only by, and is the sole property of, a certain individual; and

Whereas, no such stable chemical combination is possible, and the substance actually used with so much secrecy and profit to the proprietor is and has been employed in suitable cases for years by regular physicians, who well know its limitations and dangers; and

Whereas, by associating himself with a regular physician this pretender hopes to gain prestige and the quasi

¹ Berliner Klin. Woch., April 18th.

indorsement of the regular profession, thus enabling him longer to delude the public; and

Whereas, the association of a regular physician in such a capacity is calculated to injure the public and is degrading to those who are in fellowship with such physician, and, recognizing that "naught but evil can finally result from trifling with moral physical facts, and that it is better to cure rightly and really than wrongly and delusively," and that by the "humbuggery of secrecy, delusion and hypnotic suggestion," a far less number will, in the end, receive benefit; and

Whereas, it is the opinion of the members of this Society that the use of the drugs, in the manner employed, for the cure of inebriety by the aforesaid impostor, produces a cerebral stimulation with intellectual disorders which are sometimes quite serious, together with other grave nervous troubles, themselves constituting a form of inebriety frequently leading to insanity and suicide, and a lowering of vitality rendering the patient less able to resist and recover from ordinary diseases; and

Whereas, in those cases of inebriety claimed to have been cured by means of this pretended secret method of treatment, it is our opinion that such cures resulted, not because of said treatment, but in spite of it; and there seems little doubt that hypnotic suggestion played an important part in effecting said cures; and it is our opinion that in all of the so-called "cures" the result attained could have been better secured by improving the moral condition of the patient, by the use of tonics or hydro-therapeutics, regulating nervous action, and by attention to the digestive tract, without subjecting the patient to the dangers of another form of inebriety, and without the element of secrecy. It is, therefore,

RESOLVED, That this Society hereby directs its president to refer this subject to a proper committee, who shall, before the next regular meeting, ascertain if any member of this Society has identified himself with the manufacture, sale, distribution or use of any secret remedy contrary to the code of ethics under which this Society is organized, and, if so, that such member or members be recommended for expulsion from membership in this Society at said next regular meeting.

THERAPEUTIC NOTES.

SODIO-SALICYLATE OF THEOBROMINE OR DIURETIN.—The last number of the JOURNAL contained an extract from a paper by Dr. H. A. Hare (*Therapeutic Gazette*, March 15th), giving the writer's experience with these drugs. The statement there made in regard to the price of these articles we are now informed by the agents for Diuretin Knoll is incorrect. According to their statement the price of diuretin is \$1.75 and the price of sodio-salicylate of theobromine is the same.

SALOPHENE.—Salophene occurs in small white flakes almost insoluble in water, very soluble in alkaline solutions, in alcohol and ether. It is quite tasteless and odorless. Alkalies break it up into salicylic acid and acetylaminodiphenol. The same change takes place in the body when it comes into contact with the pancreatic or intestinal fluid. It passes unchanged through the stomach. According to Siebel, there is no advantage to be gained by giving more than 5 or 6 grammes during the day. The salophene not decomposed is eliminated by the bowel. The acetylaminodiphenol is partly excreted by the kidneys, and the salicylic acid can be found in the urine fifty hours after the administration of the drug. Siebel comes to the conclusion that salophene is superior to salol, both on account of its want of taste and smell, as well as from its less poisonous properties.

Correspondence.

SECOND MEETING OF THE ASSOCIATION OF MILITARY SURGEONS OF THE NATIONAL GUARD, ST. LOUIS.

MR. EDITOR:—I wonder if the readers of the JOURNAL appreciate the interest which medical men are taking in the National Guard of our States. At St. Louis, on April 19th, 20th and 21st, the second meeting of the Association of Military Surgeons of the National Guard of the United States was held. It is only a few years since the term "militia" was used in hardly a complimentary sense; but if one can judge from the meeting, which occurred in St. Louis, of medical men from all portions of the country, the opprobrium of belonging to the militia will soon be abolished.

A more earnest, zealous, patriotic group of men it has not been my fortune to meet. The East was not enough represented. The men came principally from the middle and western sections of the country; the majority were between forty and fifty years of age, all anxious to advance the efficiency of the National Guard. And by the by, there are few of us who recognize that this National Guard is our "Landwehr." We are, as a country, absolutely defenseless against any of the great powers, and to our National Guard we must turn in time of need. This condition is now appreciated by the regular army, and the presence of Colonels Greenleaf and Alden, from Washington, showed the interest of the United States Army, and I feel sure that the representatives of the regular army were greatly pleased with the personnel of the Association.

It was an American convention in the fullest sense of the term,—bright, active, common-sense men gathered from all parts of the country, who had laid aside their work to devote themselves to the interest of the National Guard and to have a good time. This last element was carried out in full by the hospitable citizens of St. Louis, who entertained the Association in a very liberal manner. Receptions, dinners and a civic ball were tendered the Association, and were appreciated.

This diversion did not prevent the Association from doing good work. A number of very interesting papers were read, and a large number of interesting discussions ensued. The spirit of the Association was towards placing the National Guard of the respective States in touch with the regular army. As was aptly said during some after-dinner remarks, "the regular army surgeons were but the elder brothers of the National Guard surgeons," and certainly a fraternal spirit was manifested by the elder brothers, who, in every way in their power, encouraged and directed the well-meant efforts of the Association.

Possibly some of the titles of the papers will be of interest to you. Lieutenant-Colonel Charles R. Greenleaf, U. S. A., read a paper on "The Practical Duties of an Army Surgeon in the Field during Time of War"; "Some Needs of the National Guard," by Major Lawrence C. Carr, Surgeon Ohio National Guard; and "The Primary Dressing of Fractures," by General Scott Helm, Surgeon General National Guard, Arizona, were of great interest. Fifteen or twenty papers in all were read, some of them by title, and they will form a volume of transactions, which will doubtless come to your hand.

One of the most interesting features on April 20th was an exhibition of the field appliances and work of the Medical Department of the United States Army, and Major John Van R. Hoff, Surgeon U. S. A., commanding a detachment of the United States Hospital Corps from Fort Riley, Kan., gave an exhibition illustrating the following subjects:

- (1) Inspection of the Hospital Corps Detachment.
- (2) Inspection of the Field Hospital. During this inspection, and each day of the convention, an explanation was given of the various field appliances used by the Medical Department, United States Army; of the methods of keeping records; managing field hospital, etc.
- (3) Bearer Drill with Field Litter: extemporized litters

(blanket, coat, rifle, etc.); lifting, lowering and carrying patients by one, two, three or four bearers; passing obstacles with ambulance.

(4) First Aid Drill: the application of temporary dressings; utilizing materials ordinarily at hand on the battlefield for splints, etc.

(5) Assembly of Squads: formation and dismissal of detachment.

Subjects: (1) Fracture of right clavicle; (2) dislocation of left shoulder; (3) fracture of right arm, middle third (compound); (4) fracture of left forearm, near elbow; (5) haemorrhage from right femoral artery; (6) flesh wound of scalp; (7) perforating gun-shot wound, left chest; (8) gaping knife-wound, right abdomen; (9) fracture of left femur, lower third (compound); (10) fracture of right tibia, middle third; (11) sunstroke; (12) resuscitation of apparently drowned.

It is, of course, of interest to us in Massachusetts to remember that the JOURNAL had the honor of suggesting the formation of ambulance corps, in an editorial in the issue of September 25, 1884.

Following the regular army demonstration, a lantern-slide exhibition was made of the work and drill of the Ambulance Corps of the First Brigade, M. V. M. This attracted considerable attention, especially from the regular army officers, who, I fancy, were much pleased with the efficiency of the corps.

The address of the President, General N. Senn, Surgeon-General, of Wisconsin, was filled with interesting suggestions to increase the efficiency of the National Guard. Many of these suggestions were acted upon, and made the sentiment of the Association, and will doubtless be of value to the medical department of the National Guard. Many regrets were felt at the absence of Surgeon-General Bryant, of New York, who has so actively interested himself in the National Guard.

On Wednesday morning a clinic was held at the City Hospital by General Senn. The amphitheatre was crowded with spectators, and an incision of the knee-joint, and an amputation of the leg were performed. The lady who were present were especially impressed by General Senn's ability to talk and operate at the same time, and one of the local newspapers stated, that "he grew as enthusiastic over proving the accuracy of his diagnosis as a good Republican platform-orator does over the benefits of the McKinley bill, and like the latter, he produces something of his own enthusiasm in his audience."

Words of praise were accorded to Colonel E. Chancellor, the Chairman of the Committee of Arrangements, whose duties were so efficiently performed. Much of the success of the meeting was due to his efforts.

The next meeting of the Association will be held in Washington, in May, 1893.

B.

METEOROLOGICAL RECORD.

For the week ending April 23, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer.		Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.		
S...17	29.88	43	54	32	42	33	32	W.	W.	15	8	C.	O.
M...18	29.93	43	48	37	45	63	54	N.	S.E.	6	6	C.	C.
T...19	30.24	47	55	38	45	58	57	N.	S.	12	4	C.	C.
W...20	30.21	47	55	38	45	58	57	N.W.	S.W.	14	14	C.	C.
T...21	30.29	50	58	38	45	65	61	W.	S.W.	14	14	C.	C.
F...22	29.89	55	62	31	21	32	30	S.W.	S.	14	13	C.	C.
S...23	29.84	57	62	32	20	54	67	W.	W.	16	10	O.	C.
S...24	30.07	50	58	40	54	61	57			10	9		
													.69

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. * Indicates trace of rainfall. ** Mean for week.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, APRIL 23, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from			
				Infectious diseases.	Acute lung disease.	Scirr.	Diarrhoeal disease.
New York	1,515,301	901	351	15.84	22.33	2.57	1.65
Chicago	1,059,850	475	209	13.44	7.26	2.10	.63
Philadelphia	1,046,964	436	158	13.33	15.64	2.53	1.15
Brooklyn	806,343	386	135	14.26	23.92	3.64	.76
St. Louis	451,000	185	56	13.34	10.08	1.21	3.78
Boston	445,477	222	51	14.34	11.23	3.15	2.52
Baltimore	431,439	180	51	14.44	11.23	3.15	7.62
St. Paul	296,908	108	41	13.80	4.66	.32	.59
Cleveland	282,000	100	34	12.40	13.00	3.00	—
New Orleans	242,000	100	40	11.00	14.00	1.00	2.00
Pittsburgh	240,000	80	39	16.25	12.50	1.25	3.75
Washington	230,302	106	36	6.50	10.31	1.28	—
Nashville	76,168	27	5	11.11	—	—	7.40
Portland	60,482	12	4	33.33	—	—	—
Cambridge	58,425	14	2	7.14	14.29	—	—
Lowell	57,096	29	12	17.14	27.69	3.45	3.45
Fall River	54,308	28	10	10.71	28.56	—	7.34
Cambridge	52,000	17	5	29.41	5.88	—	2.94
Springfield	51,237	24	4	16.67	45.76	—	—
Lawrence	44,654	27	7	22.22	3.70	—	—
Springfield	44,179	15	5	6.67	20.00	—	—
New Bedford	40,733	18	6	—	22.22	—	—
Salisbury	39,301	13	2	15.38	7.69	—	—
Chelsea	27,369	9	2	22.22	44.44	—	—
Haverhill	27,412	5	1	—	20.00	—	—
Faunton	25,445	13	4	—	16.66	—	—
Gloucester	24,651	7	2	14.28	57.14	—	—
Newton	24,379	10	0	—	—	—	—
Boston	22,031	19	10	10.00	20.00	10.00	—
Fitchburg	22,037	13	5	7.69	7.69	7.69	—
Waltham	18,707	2	0	—	—	—	—
Pittsfield	17,281	4	1	—	75.00	—	—
Quincy	16,723	2	2	—	12.50	—	—
Uxbridge	14,939	7	3	—	14.29	—	—
Newburyport	13,947	1	0	—	—	—	—
Medford	11,079	4	0	—	25.00	—	—
Hyde Park	10,193	5	4	26.00	20.00	—	20.00
Peabody	10,158	1	1	—	—	—	—

Deaths reported 3,462; under five years of age 1,284; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 163; acute lung diseases 598; consumption 423; diphtheria and croup 178; scarlet fever 55; diarrhoeal diseases 46; typhoid fever 39; measles 36; cerebro-spinal meningitis 23; whooping-cough 19; erysipelas 19; malarial fever 19; small-pox 19;

From typhoid fever Chicago 13, Philadelphia 6, Lawrence 3, New York, Brooklyn and Cincinnati 2 each, St. Louis, Cleveland, Pittsburgh, Milwaukee, Washington, Cambridge and Salem 1 each. From measles New York 23, Chicago, Brooklyn and Pittsburgh 3 each, Philadelphia, St. Louis, Milwaukee and Lowell 1 each. From cerebro-spinal meningitis New York, Chicago and Brooklyn 5 each, Worcester 3, Boston, Washington, Lowell, Lawrence and Gloucester 1 each. From whooping-cough New York 7, Chicago 4, Cincinnati 2, Philadelphia, Brooklyn, Boston, Cleveland, Washington and Cambridge 1 each. From erysipelas New York 7, Chicago and St. Louis 3 each, Philadelphia 2, Brooklyn, Cambridge, Springfield and New Bedford 1 each. From malarial fever New York, Philadelphia and Brooklyn 2 each, Nashville 1. From small-pox New York 3, Pittsburg 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,183,736, for the week ending April 9th, the death-rate was 23.3. Deaths reported 4,443: whooping-cough 172, measles 163, diphtheria 57, scirr. fever 45, diarrhoea 31, fever 25.

The death-rates ranged from 12.3 in Croydon to 33.5 in Salford; Birmingham 26.0, Bradford 24.5, Hull 22.4, Leeds 24.6, Leicester 21.4, Liverpool 26.9, London 22.2, Manchester 31.0, Newcastle-on-Tyne 23.6, Nottingham 20.3, Portsmouth 16.2, Sheffield 24.0, Wolverhampton 26.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 16, 1892, TO APRIL 29, 1892.

Leave of absence for fourteen days on surgeon's certificate of disability is granted to Captain AUGUSTUS A. DE SOFFE, assistant surgeon, U. S. A., with authority to enter Army and Navy General Hospital, Hot Springs, Ark., for treatment.

MAJOR JOHN H. JANEXWAY, surgeon, U. S. A., is relieved from the further operation of so much of special orders, as directs

him, in addition to his other duties, to perform the duties of post surgeon at Frankford Arsenal, Tenn.

Leave of absence for one month to take effect on or about May 1, 1892, is granted FIRST-LIEUT. OGDE RAFFERTY, assistant surgeon, U. S. A.

By direction of the Secretary of War, Par. 13, S. O. 74, March 29, 1892, A. G. O., removing the suspension of the orders changing the stations of CAPTAIN AARON H. APPEL and FIRST-LIEUT. JULIAN M. CABELL, assistant surgeons, U. S. A., is revoked.

FIRST-LIEUT. GEORGE M. WELLS, assistant surgeon, U. S. A., is relieved from duty at San Carlos, Ariz., and ordered to report in person to the commanding officer, Fort Grant, Ariz., for duty at that station.

Leave of absence for one month to take effect on the final adjournment of the board of officers convened by Par. 1, S. O. 32, c. s. Hdqrs. Dept. Mo., is granted CAPTAIN JOHN L. PHILLIPS, assistant surgeon, U. S. A.

CAPTAIN BENJ. MUNDAY, assistant surgeon, U. S. A., is granted an extension of one month to leave of absence granted in S. O. 40, Dept. Dak., March 19, 1892, S. O. 98, A. G. O. April 26, 1892.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 30, 1892.

L. G. HENNERBERGER, surgeon, detached from U. S. S. "Iroquois" and granted three months' leave of absence.

J. E. PAGE, assistant surgeon, detached from U. S. S. "Iroquois" and ordered to the receiving-ship "Independence" at Navy Yard, Mare Island, Cal.

J. R. WAGENER, surgeon, detached from U. S. S. "Kearsarge" and Naval Hospital, New York, and placed on waiting orders.

ASSOCIATION OF AMERICAN PHYSICIANS.

PROGRAMME OF THE SEVENTH ANNUAL MEETING.

The Association of American Physicians will hold its seventh annual meeting in the Army Medical Museum, Washington, D. C., May 24, 25 and 26, 1892.

TUESDAY, MAY 24th.

Morning Session (10 a. m.) — 1. President's Address, Henry M. Lyman, Chicago, Ill. 2. General Business. 3. "The Cold Water Treatment of Typhoid Fever," G. Wilkins, Montreal. 4. "The Treatment of Follicular Tonsillitis," G. M. Garland, Boston. 5. "A Collective Investigation in Regard to the Value of Quinine in Malarial Haematuria," or Malarial Hemoglobinuria, H. A. Hale, Philadelphia. 6. "Alcoholism," T. S. Latimer, Baltimore.

Afternoon Session (2:30 p. m.) — 7. "Practical Results of Bacteriological Researches," G. M. Sternberg, U. S. N. S. 8. "The Treatment of Experimental Tuberculosis by Koch's Tuberculin, Hunter's Modification, and other products of the Tubercle Bacilli," E. L. Trudeau, Saranac Lake. 9. "Report of a Case of Glanders, with Results of Bacteriological Study," William Pepper, Philadelphia. 10. "The Bacteriological Study of Drinking-Water," V. C. Vaughan, Ann Arbor. 11. "The Morbid Anatomy of Leprus," Heneage Gibbes, Ann Arbor, Mich.

WEDNESDAY, MAY 25th.

Morning Session (10 a. m.) — 12. Discussion on Dysentery; Etiology and Pathology, Referee W. T. Councilman, Baltimore. Symptomatology, Complications and Treatment, Co-Referee, A. B. Ball, New York. 13. "Treatment of Acute Dysentery by Antiseptic Color and Rectal Irrigation," W. W. Johnston, Washington, D. C. 14. Contribution to the Study of Malaria in Africa," M. C. Dahlgren, Virginia. 15. "Pulsating Pleural Effusions," James C. Wilson, Philadelphia.

Afternoon Session (2:30 p. m.) — 16. "A Case Presenting the Symptoms of Landry's Paralysis, with Recovery," F. T. Miles, Baltimore. 17. "A Case Showing Symptoms of Landry's Paralysis; Recovery," A. McPhedran, Toronto, Canada. 18. "The Areas of Anesthesia in Spinal Cord Lesions as a Guide to Localization," M. A. Starr, New York. 19. "A Study of the Seasonal Relations of Chorea and Rheumatism for a Period of Fifteen Years," Morris J. Lewis, Philadelphia. 20. "The Significance of Intermission in Functional Nervous Diseases," W. H. Thompson, New York.

THURSDAY, MAY 26th.

Morning Session (10 a. m.) — 21. "Misconception and Misnomers Revealed by Modern Gastric Research," Charles C. Stockton, Buffalo. 22. "The Production of Tubercular Breathing in Consolidation and other Conditions of the Lungs," Charles Cary, Buffalo. 23. "The Different Forms of Cardiac Pain," Samuel G. Chew, Baltimore. 24. "The Late Systolic Murmur," J. P. Nichols, Galesburg, Illinois. 25. "Tube Casts and their Diagnostic Value," L. N. Banforth, Chicago. 26. "Studies in Hypnotism," E. F. Westbrook, Brooklyn. 27. "Influenza, and some of its Present Aspects," Morris Longstreth, Philadelphia. 28. Concluding business.

The annual dinner of the Association will be held on the evening of Wednesday, May 25th, at eight o'clock, in the Arlington Hotel.

SUFFOLK DISTRICT MEDICAL SOCIETY.

ELECTION OF OFFICERS.

At the annual meeting, April 30, 1892, the following officers were elected for the ensuing year:

President, Edward N. Whittier; Vice-President, A. L. Mason; Secretary, James J. Minot; Treasurer, Edward M. Buckingham; Member of the Nominating Committee of the Massachusetts Medical Society, W. L. Richardson; Censors, H. L. Burrell, G. M. Garland, F. H. Davenport, H. F. Vickery, F. B. Harrington.

JAMES J. MINOT, M.D., *Secretary.*

SOCIETY NOTICES.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES. — The third annual session of the Association of American Colleges will convene at the building of the Detroit College of Medicine, at 3 o'clock p. m., Wednesday, June 8, 1892. Dr. N. S. Davis, President of the Association, will read a paper upon the following subject: "To what Extent should Clinical Instruction be afforded the Student of Medicine in a Regular Course?" Another paper will be read by Prof. V. C. Vaughan, of the University of Michigan, as follows: "To what Extent should Laboratory Instruction be afforded the Student of Medicine in Regular Course?" Discussion on the papers will follow.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT, SECTION FOR OBSTETRICS AND GYNECOLOGY. — There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, May 11, 1892, at 8 o'clock.

Dr. E. W. Cushing will read "On the Methods and Complications of Vaginal Hysterectomy."

Dr. G. H. Washburn, "Tubal Pregnancy: A Case with Rupture, Operation and Recovery."

GEORGE HAVEN, M.D., *Secretary,*
92A Pinckney Street.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, May 9th, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock p. m.

"A Peculiar Form of Nystagmus, with Remarks on its Causation and its Relation to Cheyne-Stokes Respiration," a paper prepared by Dr. W. N. Bullard, assisted by Dr. Wentworth.

"A Case of Congenital Cardiac Disease with Atalectasis; Recovery; Subsequent Sudden and Complete Premature Closure of Cranial Sutures, with Resulting Idiocy," a paper by Dr. H. W. Broughton.

G. G. SEARS, M.D., *Secretary.*

NORFOLK DISTRICT MEDICAL SOCIETY. — The annual meeting will be held at the Norfolk House, Eliot Square, Roxbury, Tuesday, May 10th, at 12.30 p. m.

The Board of Censors will meet at the same place at 12.45 p. m.

The examination of candidates will take place one week later, on Tuesday, May 17th, at 7 p. m., at the office of the secretary. The written examination will begin at 7 p. m., the oral at 8 p. m.

Dinner at 1.15 p. m.

Annual Address by Robert T. Edes, M.D.

Remarks by members.

JAMES C. D. PIGEON, M.D., *Secretary.*
130 Warren Street, Roxbury.

PRESBYTERIAN HOSPITAL APPOINTMENTS — APRIL 12, 1892.

Visiting Physicians. — Francis P. Kinnicutt, William P. Northup, Walter B. James.
Hospital Staff. — F. H. McMaster, second medical assistant; David Boraard, Jr., third medical assistant; Ernest Schultz, second surgical assistant; Ed. H. Bersing, third surgical assistant.

ERRATUM IN COLORED PLATE OF DR. KEEN'S RESECTION OF LIVER.

By error, in the colored plate illustrating Dr. W. W. Keen's case of resection of the liver in the *JOURNAL* of April 30th, the drawing is marked "natural size." It should have been "two-thirds of the natural size."

RECENT DEATH.

ISAAC G. PORTER, M.D., of New London, Conn., died April 30th, aged eighty-six years. He was a graduate of Yale College in the class of 1826, and received the degree of M.D. from the University of Pennsylvania in 1833. During the war he was post surgeon at Fort Trumbull.

Address.**REMARKS ON SPECIALISM.¹**

BY WM. OSLER, M.D., PRESIDENT,
Professor of Medicine in the Johns Hopkins University, Baltimore.

GENTLEMEN: First, let me express my gratitude for your kindness in conferring upon me the honor of your Presidency — an honor enhanced by the standing and character of the men who have previously occupied this chair. To have selected as your presiding officer one whose work has lain in the wide field of general medicine, is an indication that you duly appreciate the relation of the special subject in which we are now interested, and to which this Society is devoted. The diseases incident to infancy and childhood are so varied, covering every department of internal medicine, as well as of surgery, that the broad distinctions emphasized by the names physician and surgeon suffice to characterize us, and happily we have not as yet been stamped with a distinctive appellation, under which so many of our colleagues in other lines labor. In the extraordinary development of modern medicine limitation in work is inevitable, and although as practitioners and teachers we are all necessarily interested, to some degree, in the diseases of children, there are among us those who find in them their chief occupation, and our Society is but an organized expression of a very natural desire to unite for the purposes of study.

On an occasion of this kind it seems best to me not to discuss any particular subject, but to deal with some problem of general interest, with bearings, however, upon our organization. In comparison with the older countries of Europe specialism may truly be said to be the most distinctive feature in the medical profession of America. And it may not be inappropriate to consider here a few of its advantages and disadvantages.

"That which has been is that which shall be." Medicine may be said to have begun with specialists. The Ebers Papyrus is largely taken up with the consideration of local diseases, and centuries later we find in Greece certain individuals treating special ailments; and Aristophanes satirizes a "rectum specialist" in a way not unlike our comic journals would "poke fun" at an oculist or an aurist. The tail of our emblematic snake has returned into its mouth; at no age has specialism been so rife. To follow its gradual development during the present century would take more time than is at my disposal, and would not be a profitable task. The rapid increase of knowledge has made concentration in work a necessity; specialism is here, and here to stay.

The advantages to the profession which followed this differentiation have nowhere been more striking than in this country, and the earnest workers in ophthalmology, gynecology, dermatology, and other branches have contributed largely to inculcate the idea of thoroughness, the necessity for which is apt to be lost sight of in the hurry and bustle incident to the growth of a nation. Better work is done all along the line: a shallow diffuseness has given place to the clearness and definiteness which comes from accurate study in a limited field. The day has gone by for Admirable Crichtons, and although we have a few

notable illustrations in our ranks of men who have become distinguished authorities in eye and skin diseases, and upon syphilis without sacrificing their interests in general surgery, such are necessarily rare, and, unfortunately, from the very circumstances of the case likely to become more uncommon. Then how comforting to the general practitioner is the wise counsel of the specialist. We take him a case that has puzzled and annoyed us, the diagnosis of which is uncertain, and we consult in vain the unwritten records of our experience and the printed records of our books. He labels it in a few minutes as a coleopterist would a beetle, and we feel grateful for the accuracy of his information and happy in the possession of the label. And if sometimes (standing like Aaron between life and death) he illuminates too brightly the darkness of our ignorance, are we not as often beholden to him for gentle dealing?

It is almost unnecessary to remark that the public, in which we live and move, has not been slow to recognize the advantage of a division of labor in the field of medicine. The desire for expert knowledge is, however, now so general that there is a grave danger lest the family doctor should become, in some places, a relic of the past. It must indeed be a comfort to thousands to feel that in the serious emergencies of life, expert skill, is now so freely available. Perhaps, as specialists, no class in our profession has been more roundly abused for meddlesome work than the gynecologists, and yet what shall not be forgiven to the men, who, as a direct outcome of the very operative details which have received the bitterest criticism, have learned to recognize tubal gestation, and are to-day saving lives which otherwise would inevitably have been lost? I have known Forman to show in one year at the Philadelphia Pathological Society, ten or twelve examples of ruptured tubal pregnancy obtained in medico-legal work (sudden deaths) in that city. The benefits which the public reap from specialism may be gathered from the fact that in a not much longer period of time I have seen seven specimens of tubal gestation, not removed by the pathologist, but by the gynecologist, with the saving of five lives. The conservatism, which branded ovariotomists as butchers and belly-rippers, is not yet dead among us, and I say it frankly, to our shame, that it has not always been professional encouragement which has supported the daring advances on special lines. Humanity owes a great debt of gratitude to the devoted men who have striven during the past half-century for exactness in knowledge and for its practical application in all departments, a debt too great to pay, too great, one sometimes feels, even to acknowledge.

Specialism is not, however, without many disadvantages. A radical error at the outset is the failure to recognize that the results of specialized observation are at best only partial truths, which require to be correlated with facts obtained by wider study. The various organs, the diseases of which are subdivided for treatment, are not isolated, but complex parts of a complex whole, and every day's experience brings home the truth of the saying, "when one member suffers all the members suffer with it." Plato must have discussed this very question with his bright friends in the profession, — Eryximachus, perhaps, — or he never could have put the following words in the mouth of Socrates: "I dare say that you may have heard eminent physicians say to a patient who comes to them with

¹ Made at the opening of the Fourth Annual Meeting of the Pediatric Society, Boston, May 2, 1892.

bad eyes, that they cannot cure the eyes by themselves, but that if his eyes are to be cured, his head must be treated; and then again they say that to think of curing the head alone and not the rest of the body also, is the height of folly. And arguing in this way they apply their methods to the whole body, and try to treat and heal the whole and the part together. Did you ever observe that this is what they say?² A sentence which embodies the law and the gospel for specialists.

A serious danger is the attempt to manufacture rapidly a highly complex structure from ill-seasoned material. The speedy success which often comes from the cultivation of a specialty is a strong incentive to young men to adopt early a particular line of work. How frequently are we consulted by sucklings in our ranks as to the most likely branch in which to succeed, or a student, with the brazen assurance which only ignorance can give, announces that he intends to be a gynecologist or an oculist. No more dangerous members of our profession exist than those born into it, so to speak, as specialists. Without any broad foundation in physiology or pathology, and ignorant of the great processes of disease no amount of technical skill can hide from the keen eyes of colleagues defects which too often require the arts of the charlatan to screen from the public.

In the cultivation of a specialty as an *art* there is a tendency to develop a narrow and pedantic spirit; and the man who, year in and year out, examines eyes, palpates ovaries, or tunnels urethra, without regard to the wider influences upon which his art rests, is apt, insensibly perhaps, but none the less surely, to acquire the attitude of mind of the old Scotch shoemaker, who, in response to the Dominie's suggestions about the weightier matters of life, asked, "D'ye ken leather?" There is not a single department, the study of which does not carry with it the correction of this most lamentable tendency. Problems in physiology and pathology touch at every point the commonest afflictions, and exercised in these, if only in the early years of professional life, the man is chastened, so to speak, and can never, even in the daily round of the most exacting practice, degenerate into a money-making machine. And let the younger of my hearers lay this to heart: scan the lives of say twenty of the men most prominent in special lines of medicine and surgery to-day in this country, and you will find, with scarcely an exception, the early years devoted to anatomical, physiological, or pathological studies. They rose high because the foundations were deep. The most distinguished oculists have been men trained in physiology and pathology; and some, like Sir Wm. Bowman, have had reputations so pre-eminent in several departments that the identity of the physiologist has been lost in the ophthalmologist.

In the larger cities the work of the specialist encroaches more and more upon that of the general practitioner, and this condition, though in many ways to be regretted, is not likely to be changed. I have known the head of a household pay, in the course of a year, for the professional services of six physicians—a gynecologist, an oculist, a laryngologist, a dermatologist and a surgeon. What remained after this partition of the general practitioner came in sixth and looked after the health of the children. It is interesting to note that to this one pertains the functions to a large extent

of the old family doctor, and further advice is usually sought through him or at his suggestion. In the evolution of the specialist, the children's doctor is the last to appear, not because of any extreme differentiation, but rather he is a vestigial remnant of what was formerly in cities the general practitioner. May I not say that there are members of our Society whose interest in their work is largely due to this new feature in domestic life? In the division of the household among our brethren, the children alone remain, and fortunately their ailments are too diversified to allow much specialization.

After all, though specialism is rife, and has so carved the "body of physic" that Hippocrates would scarcely recognize it, and though its sounds go out loudly and echo through the journals and society reports, nevertheless, I would boldly make claim for a wider diffusion of its benefits. Of dwellers in cities arrogance is a peculiar trait, and we discuss problems in a "surely-we-are-the-people" style, forgetting that outside lie the greater millions equally precious to *Asclepius*, and under the care of men who cannot specialize, who must be able to set fractures, perform version, treat iritis as well as fever, earache as well as the itch. What of the benefits of specialism to this larger class from whose ranks the cities are replenished and whose health is so essential to the nation? The out-door department of our hospitals and the consulting-rooms of city physicians tell of the necessity of special knowledge to these people, particularly in emergencies and in the graver and more unusual forms of disease; but those who thus avail themselves form but a fraction of the numbers who require technical skill for the purposes of diagnosis or treatment. Very little additional knowledge enables the general practitioner to grapple with a large proportion of the cases which in cities come under the care of the specialist. The question resolves itself into one of education. It is impossible in three sessions to bring men beyond the superficial routine, but in a more prolonged course—as I know from experience—the student can be taught practically, in the wards and dispensaries enough of the technique of the specialist to give, at least, a foundation upon which to work. He should leave the schools knowing the practical application of the microscope, the ophthalmoscope and the laryngoscope, and in these and other lines he should have proceeded to the stage in which he recognizes the limitations of his knowledge. Such a man, in general practice, should know a "choked-disk"; the examination for tube-casts should be a familiar, every-day task; and he should be able to tell whether a vocal chord was paralyzed. A serious obstacle to this happy consummation—which can be reached in a well-ordered system of education—is the absence, in the early years of practice, of material upon which to freshen the memory and to "keep the hand in"; but the man who, as a student, has reached a certain point always retains some measure of the old facility. The post-graduate schools have done much to enable men to revive, and to acquire, technical skill, and have been of great service in generalizing special knowledge. In the practice of a good, all-round man, the number of cases demanding the help of a specialist is, after all, not great. The ordinary run of nervous disorders should be recognized, adenoid vegetations he would treat with the skill of a laryngologist; he would know enough not to tinker with a case of glaucoma; and though he might not diagnose a pus-tube from

² Charmides: Jowett's translation.

tubal gestation, he would (in this as in other details) have learned to know his limits and be ready to seek further advice.

With the revival and extension of education the benefit of specialism will become more widespread, and to this end the efforts of colleges and hospitals should be directed.

The organization of societies for the study of particular diseases has been of late a very notable feature in the professional life of this country. Since the foundation of the Ophthalmological Society, more than a dozen associations have been formed, and their union in a triennial congress has proved a remarkable success. These societies stimulate work, promote good-fellowship, and aid materially in maintaining the standard of professional scholarship. They are nearly all exclusive bodies, limited in membership, and demanding for admission evidence of special fitness. This point is sometimes urged against them; but the members exercise no arbitrary privilege in asking of candidates familiarity with the subject, and evidence of ability to contribute to the general store of knowledge. In some of the specialties these societies have been particularly useful in disciplining men who have traduced, not the code, but the unwritten traditions of our craft, acting as if they were vendors of wares to be hawked in the market-place.

Our own Society may be regarded as the outcome of a notable revival, during the past few years, of interest in the study of the diseases of children. The existence of a special journal devoted to pediatrics, and the successful issue of a large cyclopedia of the diseases of children testify to the appreciation on the part of the profession of the necessity for the more accurate study of this branch. This body offers to men who are working and teaching in pediatrics are opportunity of knowing each other, of discussing subjects of common interest, and through the medium of their publications making general the more special details of value in practice. The programme before you indicates clearly that we are all workers in general medicine; and may the character of the papers and the discussions be the best justification of the existence of an organization devoted to the study of a particular section in that field.

Original Articles.

RENAL ALBUMINURIA NOT DUE TO ORGANIC DISEASE OF THE KIDNEYS.¹

BY EDWARD S. WOOD, M.D.,
Professor of Chemistry in Harvard Medical School.

It has been my experience during the last twenty years to examine the urine in numerous cases of transient albuminuria of renal origin, as shown by the presence in the sediment of renal casts. In most of these it has naturally been impossible to follow out the cases to the complete disappearance of the albumin and casts, since most patients do not have an examination of the urine made after they feel that recovery has taken place. In very many of them, however, I have been able to make repeated examinations, and have known the albumin and casts to disappear, even in some cases which had been pronounced to be those of chronic Bright's disease.

Transient albuminuria is exceedingly common, and frequently occurs in persons who are apparently in perfect health, so that it often happens that it is only detected when an application is made for a policy in some life insurance company. In many cases the diagnosis of Bright's disease is made intentionally or accidentally; and it is to the recovery of such cases after taking some of the so-called "kidney cures," that these nostrums have obtained their popularity.

I do not propose to consider all of the causes of albuminuria included in the above title, since most of them are so universally recognized, and have been so well treated of in other places, that they are always borne in mind, and there is no danger of their being overlooked in cases in which traces of albumin are found in the urine. I refer, for instance, to the familiar classes of cases, in which transient albuminuria accompanies ordinary acute febrile diseases with high temperature (one exceptional class of cases will be mentioned), or cases of permanent albuminuria due to organic diseases which produce obstruction to the venous circulation, such as organic heart and liver diseases, or abdominal tumors which exert pressure on the abdominal vessels. Nor, as the title of my paper implies, shall I refer to renal albuminuria due to organic disease of the kidneys, nor to non-renal albuminuria, such as is due to hemorrhage or suppuration caused by diseases of the urinary mucous membranes below the kidneys, or of the genito-urinary membranes.

The cases which I do wish to consider are those due to causes which, although generally recognized, are not so apt to be borne in mind, and those in which, when the quantity of albumin reaches a decided trace, an erroneous diagnosis is liable to be made.

I think we may consider that, clinically, all cases of renal albuminuria, not due to organic disease of the kidneys, may be arranged in one of the three following classes:

I. Those due to some general disease or disturbance (not renal) which causes some change in the renal circulation.

II. Those due to irritation of the kidneys, which irritation may be general, as in the case of the chemical (or dissolved) irritants, or circumscribed, as in the case of some mechanical irritants, such as concretions in the substance of the kidneys.

III. Those due to some change in the composition of the blood.

The duration of the albuminuria naturally varies with the cause. It may be permanent, as when due to organic disease of some other organ, in which case the kidneys themselves may, after a long time, become affected with some form of organic disease, or it may be temporary, lasting for a longer or shorter time according to the cause.

I. In the first class, due to some interference with the renal circulation, we may include:

(1) The febrile albuminuria which is invariably seen in acute diseases attended with high temperature. In these cases the quantity of albumin is usually only the very slightest trace, which with the accompanying casts, entirely disappears as soon as, or very shortly after, convalescence begins. In rare cases in ordinary acute diseases the quantity of albumin may become quite large and the renal casts very numerous, so that from a single examination, it may be impossible to say whether acute nephritis has been superadded to

¹ Read at the Boston Society for Medical Observation, February 1, 1892.

the other febrile affection or not, as the following case will illustrate:

CASE I. A young adult male, suffering with typhoid fever.

December 29th. Urine had a specific gravity 1017. Quantity of albumin, large trace (nearly one-fourth per cent.). Sediment: free blood and renal epithelium; numerous hyaline, granular, blood and epithelial casts; an occasional fibrinous cast; and an occasional cast with a few oil-globules adherent.

December 30th. Quantity of urine, fifty-six fluid ounces, specific gravity, 1014. Albumin, slight trace. Character of the sediment the same as yesterday, except the number of casts decidedly smaller.

January 8th. Specific gravity, 1008. Albumin, very slight trace. Sediment: little free blood and renal epithelium; few hyaline and granular casts, some with blood and renal cells adherent; many of the casts of large diameter.

January 18th. Specific gravity, 1019. Albumin, slightest possible trace. Sediment, less in quantity but of the same character as on the 8th.

January 29th. Specific gravity, 1014. Albumin, slightest possible trace. Sediment: very few hyaline and finely granular casts; few blood globules; slight excess of renal cells.

March 5th. Specific gravity 1025. Albumin, absent. Sediment, amorphous urates and uric acid.

In this case the diagnosis of Bright's disease was actually made by one or more medical friends of the patient in another city, to whom my first analysis was shown.

I have met with a few of these exceptional cases of severe albuminuria occurring during the progress of ordinary febrile diseases, and it is interesting to note the rapidity with which the albumin diminishes to the very slightest trace. The quantity of albumin remains a large trace (from one-eighth to one-fourth per cent.) only for a day or two, then diminishes very rapidly to a very slight trace, but does not disappear entirely usually for several weeks, until the renal epithelium has been restored.

(2) Disturbances of the renal circulation due to nervous diseases, such as delirium tremens, acute mania, and the like. Albuminuria is so common in these cases that no illustrations are necessary.

(3) Passive hyperaemia of the kidneys, due to certain organic diseases of the heart and liver, to the pressure of abdominal tumors, etc.

(4) Almost any serious disease, wherever located, tends to produce secondary effects upon the kidneys, which result in albuminuria and the presence of casts in the sediment. These effects may be due to a simple disturbance of the circulation from pressure, as in the case of some tumors, or through the action of the nervous system, or they may be due to the diminished or modified metabolism resulting in an increased formation of calcic oxalate or uric acid, which will locally irritate the kidneys when separated from the urine within the renal tubules. In all of these cases of renal albuminuria secondary to serious disease elsewhere, the quantitative analysis of the urine will show the diminution of the metabolism, which, other things being equal, will be in proportion to the gravity of the principal affection. In these cases the urine as a whole (the mixed twenty-four-hour urine) does not resemble that of any of the organic diseases of the kidney, although it is in some cases very difficult and

sometimes impossible to diagnosticate them from an organic renal disease, if we only have a single specimen to examine.

(5) Albuminuria of adolescence. In this class is also usually arranged the albuminuria of adolescence, on the theory that there is at about the age of puberty, or a little earlier, a slight physiological hypertrophy of the heart. In my opinion, however, in many cases another element must be considered, namely, that of local renal irritation by a very concentrated condition of the urine, or by the separation of crystalline substances (particularly uric acid and calcic oxalate) from the urine within the renal tubules.

The following cases would usually be classed among cases of albuminuria of adolescence:

CASE II. Female child, aged thirteen.

March 21st. Specific gravity 1023. Albumin, very slight trace. Sediment: an occasional hyaline, granular and epithelial cast; excess of renal cells; an occasional blood-globule, free and adherent to casts.

April 4th. Specific gravity 1027. Albumin, very slight trace. Sediment: excess of renal cells; few blood-globules; an occasional small hyaline cast mostly with renal cells and blood-globules adherent; uric acid and calcic oxalate crystals.

April 11th. Specific gravity 1015. Albumin, very slight trace. Sediment: few blood-globules; an occasional hyaline cast.

May 1st. Specific gravity 1008. Albumin, slightest possible trace. Sediment: an occasional blood-globule; vaginal epithelium; no casts detected.

May 6th. Specific gravity 1010 $\frac{1}{2}$. Albumin, slightest possible trace. Sediment: an occasional blood-globule and renal cell; no casts detected.

June 7th. Specific gravity 1018. Albumin, very slight trace. Sediment: little calcic oxalate and an occasional hyaline cast, and blood-globule.

January 29th. Specific gravity 1021. Albumin, absent. Sediment: nothing abnormal.

CASE III. Boy, aged thirteen.

February 20, 1885. Specific gravity 1017 $\frac{1}{2}$. Albumin, very slight trace. Sediment: little blood; excess of renal cells; an occasional granular cast.

February 27th. Specific gravity 1022. Albumin, very slight trace. Sediment: little blood; excess of renal cells; hyaline and finely granular casts, mostly with blood and renal cells adherent.

April 16th. Specific gravity 1013. Albumin, very slight trace. Sediment: hyaline and granular casts, of medium diameter, some with granular renal cells adherent.

April 25th. Specific gravity 1017 $\frac{1}{2}$. Albumin, slight trace. Sediment: numerous hyaline casts, with renal cells adherent; uric acid. The casts mostly of medium diameter.

July 21st. (Fever turn.) Specific gravity 1025. Albumin trace. Sediment: uric acid; calcic oxalate; few hyaline casts; an occasional epithelial and blood cast. The casts of medium and large diameter.

November 12th. Specific gravity 1025. Albumin, trace. Sediment: calcic oxalate; hyaline casts, mostly large, and some with renal cells adherent; free granular renal epithelium.

August 10, 1886. Specific gravity 1024. Albumin, very slight trace. Sediment: little blood; calcic oxalate; an occasional large hyaline cast with renal cells and blood adherent.

October 8th. Specific gravity 1030. Albumin,

absent. Sediment: amorphous urates; little calcic oxalate.

February 2, 1887. Specific gravity 1020. Albumin, very slight trace. Sediment: calcic oxalate; little blood and excess of renal epithelium; an occasional hyaline and finely granular cast with blood and renal cells adherent; an occasional calcic oxalate cast.

July 16th. Specific gravity 1022. Albumin, absent. Sediment, nothing abnormal.

January 7, 1888. Specific gravity 1025 $\frac{1}{2}$. Albumin, absent. Sediment, uric acid.

July 29, 1890. Specific gravity 1025. Albumin, slightest possible trace. Sediment: calcic oxalate; an excess of renal cells; an occasional blood-globule; an occasional hyaline cast with few blood-globules and renal cells adherent.

August 5th. Specific gravity 1020. Albumin, slightest possible trace. Sediment, same as July 29th.

August 25th. Specific gravity 1020. Albumin, absent. Sediment, nothing abnormal.

February 13, 1891. Specific gravity 1028. Albumin, absent. Sediment, nothing abnormal.

(6) Normal albuminuria, so-called, or the albuminuria which appears in perfectly healthy individuals at certain times, such as after strenuous exertion, as in the case of soldiers after a fatiguing march, is also naturally arranged in this class. In these cases, the albuminuria lasts for an hour or two only, and, so far as I know, is never accompanied with casts in the sediment.

II. Renal irritation.

This class includes, I think, by far the largest number of cases, since it may be produced by so many different causes, and is so frequently seen in persons apparently in perfect health. It is in these cases most frequently that the albuminuria is first discovered by the life insurance examiner, since the patient, as a rule, has no other reason for consulting a physician, or having his urine examined.

Renal irritation may, according to the cause which produces it, be very mild, and last for a very long time before it is detected and its cause removed, or it may be very severe, producing a catarrhal nephritis, which may become a regular acute nephritis.

The most common causes of renal irritation are: (1) a very concentrated condition of the urine. (2) The action of chemical (or dissolved) irritants, which include some of the abnormal constituents of the urine, (a) sugar, (b) bile, (c) the irritating products of scurbita, diphtheria, and the like, and (d) numerous irritating drugs and poisons, such as cantharides, arsenic, salicylic acid, salol, and many others. (3) Mechanical irritants, such as crystals and concretions of uric acid, urates, calcic oxalate, cystin, etc. We often see two or more of these causes acting at the same time. Especially are we apt to have a very concentrated condition of the urine associated with one or more of the other irritants.

(1) Concentrated urine may be caused by errors in diet, both of omission and commission, and if a person habitually possesses a very concentrated urine, he is apt to have albuminuria accompanied by renal casts in the sediment. I see this form of renal albuminuria in apparently healthy persons more commonly than any other. Very frequently my students consult me about themselves, they having detected albumin while testing their own urine in the laboratory, and I usually find that the students having albuminuria are habitually

passing only about 800 or 900 cubic centimetres of urine of a specific gravity of 1028 to 1032. In those cases where I have made an examination of the sediment I have found a few casts, an excess of renal cells, and a few blood-globules both free and on the casts. This condition may be brought about by drinking too little — a habit which is easily acquired — or by over-eating and, at the same time, not taking enough water to properly dissolve the products formed, thereby overworking and irritating the kidneys.

The following cases will illustrate this form of albuminuria:

CASE IV. May 7, 1889. Specific gravity 1034. Albumin, slightest possible trace. Sediment: large excess of mucus; an occasional blood-globule; excess of renal cells, some of which are slightly fatty; an occasional hyaline and granular cast, most of which have an occasional renal cell, blood and oil globule adherent.

CASE V. Adult male. "Frequent micturition."

December 2d. Specific gravity 1029. Albumin, very slight trace. Sediment: excess of renal cells; few blood-globules; an occasional small hyaline cast with blood globules and renal cells adherent.

CASE VI. Rejected by life insurance examiner.

April 3d. Specific gravity 1030. Albumin, slightest possible trace. Sediment: excess of renal cells; few blood-globules; few casts, mostly of small diameter and with blood and renal cells adherent.

CASE VII. Male adult.

May 26, 1888. Specific gravity 1026. Albumin, very slight trace. Sediment: slight excess of renal cells; few blood-globules; an occasional hyaline and granular cast, some with blood and renal cells adherent.

November 8, 1889. Specific gravity 1027. Albumin, slightest possible trace. Sediment: excess of renal cells; an occasional small hyaline cast with renal cells adherent.

May 30, 1891. Specific gravity 1027. No albumin or casts.

As is well known, such a concentrated condition of the urine favors the deposition of crystalline sediments, which, if the separation occurs within the tubules, aids mechanical irritation to that of the concentrated urine, as the following case shows:

CASE VIII. Male adult.

March 12th. Specific gravity 1022. Albumin, slight trace. Sediment: calcic oxalate; acid sodium urate; an occasional finely granular cast; spermatozoa.

March 25th. Specific gravity 1016. Albumin, slight trace. Sediment: an occasional blood-globule, only one cast with blood, and renal cells detected after prolonged search.

June 28th. Specific gravity 1025. Albumin, slightest possible trace. Sediment: spermatozoa, prostatic shreds; few blood-globules. No casts.

October 5th. Specific gravity 1027. Albumin, slightest possible trace. Sediment: prostatic shreds; an occasional blood-globule; spermatozoa. No casts.

October 25th. Specific gravity 1015. Albumin, absent. Sediment, only a few secondary calcic oxalate crystals.

In all cases in which the renal irritation is chiefly due to concentrated urine, it soon subsides on diluting the urine to the normal quantity and specific gravity, and the albumin and casts gradually disappear.

(2) Chemical irritants.

(a) A urine containing a large percentage of sugar

probably acts in the same way as a concentrated urine in producing renal irritation. The following case illustrates this:

CASE IX. Adult, male.

November 5, 1888. Specific gravity, 1033. Sugar, 6½ per cent. Albumin, very slight trace. Sediment: excess of renal cells; an occasional blood-globule; few hyaline casts, some with blood and renal cells adherent.

May 24, 1889. Specific gravity, 1043. Sugar 11.4 per cent. Albumin, very slight trace. Sediment: same as above, and also few uric acid and calcic oxalate crystals.

May 25th. Specific gravity, 1037. Sugar, 7.7 per cent. Albumin and sediment, same as last examination.

June 17th. Specific gravity, 1028. Sugar, trace. Albumin, absent. Sediment, uric acid and spores.

June 20th. Specific gravity, 1023. Sugar, trace. No albumin or abnormal sediment.

October 1st. Specific gravity, 1023½. No sugar, albumin or abnormal sediment.

The following year, owing to neglect in diet, both the sugar and renal irritation reappeared.

(b) Jaundiced urine of more than a few days duration always produces more or less irritation of the kidneys. I have never examined a jaundiced urine, even in cases of simple catarrhal duodenitis, which had lasted for more than a few days without being able to detect a slight trace of albumin, and in the sediment, renal cells stained with bile-pigment, a few blood-globules, and casts with renal cells and blood adherent. If the jaundice be prolonged for a long time, it may produce marked pathological changes in the kidneys, as in one case in which the jaundice was due to a malignant growth of the pancreas, which gradually encroached upon the bile-duct. The urine was perfectly free from albumin and casts before the jaundice; these appeared in the urine, however, a few days after the patient became jaundiced, and continued until death, which occurred some weeks later. On examination of the kidneys after death, Dr. W. W. Gannett found a glomerulo-nephritis.

(c) The albuminuria of scarlatina, and the like, need only to be mentioned.

(d) The following cases illustrate renal irritation due to some of the more common drugs and poisons:

CASE X. Male adult, three weeks after a poisonous dose of arsenic.

March 2, 1891. Specific gravity, 1013. Albumin, slight trace. Sediment: excess of renal cells; few blood-globules; few hyaline and granular casts with blood and renal cells adherent.

CASE XI. Adult, female, three weeks after a poisonous dose of arsenic.

March 2, 1891. Specific gravity, 1014. Albumin, slight trace. Sediment: amorphous urates; uric acid; excess of renal cells some of which are fatty; hyaline, granular and epithelial casts, some with blood and oil globules adherent.

CASE XII. Adult, male, ten days after a poisonous dose of Paris green.

November 12, 1891. Specific gravity, 1029. Albumin, slightest possible trace. Sediment: excess of renal cells; an occasional blood-globule; an occasional hyaline cast with renal cells and blood adherent.

CASE XIII. Adult, female, after therapeutic use of bromide of arsenic.

March 27, 1890. Specific gravity, 1014. Albumin, slightest possible trace. Sediment: excess of renal cells; an occasional blood-globule; an occasional small cast with few blood-globules and renal cells adherent. (Drug omitted.)

April 11th. Specific gravity, 1017. Albumin, slightest possible trace. Sediment: uric acid; an occasional blood-globule; an occasional hyaline and epithelial cast.

April 24th. Specific gravity, 1027. No albumin. No abnormal sediment.

May 8th. Specific gravity, 1016. No albumin. No abnormal sediment.

I have seen similar results after taking Fowler's solution.

CASE XIV. Adult, female, chronic arsenic poisoning.

March 17, 1890. Specific gravity, 1021. Albumin, slightest possible trace. Sediment: excess of renal cells; an occasional blood-globule; an occasional cast with blood and renal cells adherent.

March 6, 1891. Specific gravity, 1012. No albumin. No abnormal sediment.

I have seen numerous cases of renal irritation due to chronic arsenic poisoning.

CASE XV. After therapeutic use of salicylic acid.

February 10th. Specific gravity, 1019. Albumin, trace. Sediment: numerous hyaline, granular and epithelial casts; most of the casts have few adherent blood-globules; free renal cells and blood-globules.

CASE XVI. After therapeutic use of salol.

May 26th. Specific gravity, 1022. Color, black. Albumin, slight trace. Sediment: chiefly blood-globules; excess of renal cells; few brown, granular casts, some with blood and renal cells adherent.

(3) Mechanical irritants, of which the principal ones are uric acid and urates, calcic oxalate and cystin, act by being separated from the urine in crystalline form within the renal tubules, the lining membrane of which they may irritate by their sharp angles and points. Aggregations of these crystals with mucus and blood may become lodged in the tubules, increase in size by the deposition of other crystals upon their surface mixed with blood, mucus and débris of cells, and thus form a renal concretion, which may cause a permanent circumscribed irritation or inflammation, and consequently permanent albuminuria. This form of albuminuria requires no illustrative cases.

III. Blood diseases. The albuminuria due to changes in the composition of the blood is also accompanied by the presence of renal casts in the sediment. These are almost always pure hyaline in their character, unless the blood-pigment is also separated by the kidneys, in which case we find in the sediment brown-granular casts and brown amorphous matter, as in cases of hemoglobinuria.

I have by no means attempted to exhaust the list of the causes of renal albuminuria, but merely to call attention to some of the very common ones, most of which are readily amenable to treatment, and which so frequently fall into the hands of charlatans who pronounce the case one of Bright's disease.

THE Great Charité Hospital, where most of the university clinics and special institutes for teaching and research in Berlin are housed, is about to be rebuilt on a new site.

**THE WOUNDED OF THE WOUNDED KNEE
BATTLEFIELD, WITH REMARKS ON WOUNDS
PRODUCED BY LARGE AND SMALL CALIBRE
BULLETS.¹**

BY CHARLES B. EWING,
Captain and Assistant Surgeon, U. S. A.

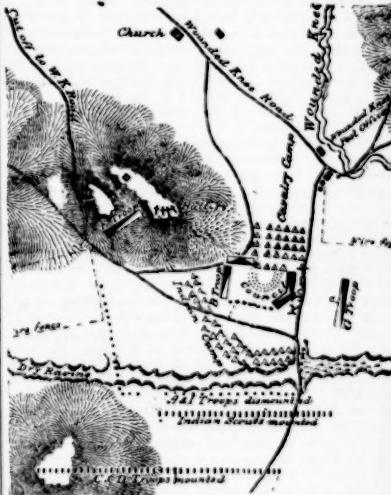
THE Great Sioux Indian War of 1890 has been fought so often that I feel an apology is necessary for inflicting it upon you on this occasion, but, while much has been said of the combatants, little has been written of the casualties of which this paper will treat.

The causes which led to this sanguinary hostility are, in brief, "the failure of the government to fulfil its obligations," and the Messiah delusion, together with a determination of the hostile Sioux not to surrender their arms to the government; this latter more particularly led to the Wounded Knee affair.

The theatre of war was located in South Dakota, and especially that part known as the Pine Ridge Indian (Ogallala Sioux) Reservation, situated in the southern part of the State mentioned. I cannot do better than to quote from the annual report of that very gallant and able soldier, Major-General Nelson A. Miles, regarding his disposition of troops. He says: "Seven companies of the Seventh Infantry, under Colonel Merriam, were placed along the Cheyenne River to restrain the Indians of that reservation, and intercept those from Standing Rock. In the meantime, a force had been gathered at the Rosebud and Pine Ridge agencies. Those at the Rosebud, under the command of Lieutenant-Colonel Poland, were composed of two troops of the Ninth Cavalry and battalions of the Eighth and Twenty-First Infantry; Colonel Shafter, with seven companies of the First Infantry controlled the country to the south and west of the Rosebud agency, with station at Fort Niobrara; those at Pine Ridge agency, under the immediate command of General Brooke, were eight troops of the Seventh Cavalry, under Forsyth; a battalion of the Ninth Cavalry, under Major Henry; a battery of the First Artillery, under Captain Capron; a company of the Eighth Infantry and eight companies of the Second Infantry under Colonel Wheaton. West from Pine Ridge agency was stationed a garrison of two companies under Colonel Tilford of the Ninth Cavalry; north of that, with headquarters at Oelrichs, was stationed Lieutenant-Colonel Sanford of the Ninth Cavalry, with three troops, one of each from the First, Second, and Ninth Cavalry; north of that, on the line of the railroad at Buffalo Gap, Captain Wells, with two troops of the Eighth and one troop of the Fifth Cavalry, was stationed; north of that, on the same railroad at Rapid City, Colonel Carr of the Sixth Cavalry, with six troops, was in command; along the south fork of the Cheyenne River, Lieutenant-Colonel Offley, and seven companies of the Seventeenth Infantry; and to the east of the latter command, Lieutenant-Colonel Sumner, with three troops of the Eighth Cavalry, two companies of the Third Infantry, and Lieutenant Robinson's company of scouts. Small garrisons were also stationed at Forts Meade, Bennett, and Sully. Most of the force was placed in position between the large hostile camp in the Bad Lands, which had gathered under Short Bull and Kicking Bear, and the scattered settlers endangered by their presence. As the line under Colonel Carr was considered the most liable to be

brought in contact with the hostile force, the division commander established his temporary headquarters at Rapid City, S. D., where this force was in close communication, and from which their movements could be directed with the least delay."

Everything indicated a peaceful settlement of affairs, when the well-laid plans of Major-General Miles looking to an early and amicable adjustment of trouble were suddenly "frustrated" by the lamentable occurrence at Wounded Knee Creek on the morning of December 29th. The opposing forces were the following: the United States troops were eight troops, Seventh Cavalry; Light Battery E, First Artillery, and Company A, Indian Scouts, making a total of 470 fighting men, under the command of Colonel Forsyth, Seventh United States Cavalry. The Indian war party consisted of 106 warriors and 294 women and children, all of the Minnecousjous Sioux, under Chief Big Foot.



This map is drawn on a scale of 300 yards to the inch. The figure at the lower left-hand corner of the Cavalry Camp shows the location of one-half of A and I troops.

So many descriptions of this unfortunate affair have been published that I shall limit myself simply to so much of an account as is to be found in the very brief and concise language of my report, made upon request, to the department commander, and in so doing, I ask pardon for using the personal pronoun to the extent that I do, but, inasmuch as a report of my personal services was desired, I was obliged to frame it in the following terms:

OFFICE OF ATTENDING SURGEON,
ST. LOUIS, Mo., June 23, 1891.

To the Adjutant-General, Division of Missouri, Chicago, Ill.
Sir:—Understanding that a report of my services at the battle of Wounded Knee is desired, I have the honor to submit the following:

The battle began at 9:30 A. M., December 29, 1890, and the troops withdrew from the field about 2 P. M., and

¹ Read before the Association of Military Surgeons of the National Guard, U. S., at St. Louis, April 19, 1892.

marched to Pine Ridge agency, reaching that point sometime between 9.30 and 10 o'clock that evening.

Lieutenant Kinzie, Second United States Infantry, Mr. James Asay, Indian trader at Pine Ridge agency, and myself, were seated in an open wagon within ten to fifteen feet of one end of the parallelogram of soldiers that surrounded the Minneconjous Sioux band under Big Foot.

Colonel Forsyth, Seventh United States Cavalry, was writing a communication which one of our party was to carry to General Brooke, commanding Department of the Platte, then at Pine Ridge agency, and while waiting for communication, the firing commenced. A volley came in our direction, the bullets whistling unpleasantly about us; our horses took fright, and, becoming uncontrollable, ran right across the line of fire, but were turned, and finally stopped near Louis Moosonee's store, about three hundred yards distant from the field of battle; we alighted, and I was then informed by Lieutenant Kinzie that he had been shot in the foot; after examination of the same, I immediately returned to the camp and bussed myself in the care of the wounded.

I did not think it a time for ceremony, hence dispensed with the formality of reporting for duty, and at once went to work. The work consisted principally of what is known as first aid to the wounded. The only exception being an operation of a plastic nature, when I replaced and stitched the severed nose of Mr. Wells, the interpreter, belonging to Lieutenant Taylor's command of Indian scouts. This was the only operation, if my memory serves me, that was performed on the field.

This first aid consisted in stopping hemorrhage; applying dressings to wounds; putting up fractures; giving stimulants; and allaying pain. Later it became necessary to redress many of the wounds, as is often the case, the first dressing being only temporary.

I accompanied Captain Edgerly's troop to a point about three miles to the west, where Captain Jackson was reported to be surrounded by hostile Brûlés. Truth forbids that I place this in the light of a medical service, and I freely confess that it was only after arriving at our destination that I was aware that I lacked everything in the way of dressings to render aid to the wounded in case of trouble; of course, much could be done in that regard by using the clothing and equipment of the men. My only excuse is that I went very suddenly, so quickly in fact that there was no time for obtaining dressings. It was in this way: I was standing on the brow of the hill watching the firing of the Hotchkiss guns and the barreling of the ridge, when Captain Edgerly's troop galloped past, and seeing a horse in the troop without a rider, I ran out and jumped in the saddle. I had provided myself with carbine and ammunition, hence was in good shape. It did not take us more than fifteen minutes to ride the three miles, and we were just in time to see the Indians disappear in the direction of Pine Ridge agency. After remaining about fifteen or twenty minutes, I suddenly remembered that I had absolutely nothing in the way of dressings, hence returned to camp with Lieutenant Brewer for the purpose of obtaining some, but learning that the command was to return immediately, I found my services would not be needed, hence did not obtain dressings as I intended doing.

Now, to sum up: I was on the field from 9.30 A. M. to about 4 P. M., at which hour we began our march back to the agency. Of that six and one-half hours, I am quite sure I spent two and one-half to three hours at the dressing station, and the same length of time superintending the removal of a part of the wounded and at least three-fourths of the dead, to which must be added about three-quarters of an hour taken up in accompanying Captain Edgerly's command and returning as stated above.

We consumed about five and one-half hours on the march to the agency, which was of necessity slow. I rode a horse (kindly furnished me by a troop commander), as did also Assistant Surgeons Hoff and Glennan. I did not render any medical service on the march, and think it quite unlikely that such could have been rendered efficiently, as darkness came on quickly and lights were not permitted

in the command. I was not called upon to render any aid by the surgeon officially in charge, and I fail to see, under the conditions, how the wounded could have been benefited further till arrival at division hospital. I would be failing in a proper appreciation of the work of my brother surgeons in this connection were I not to mention the very efficient and untiring services of Captain Van R. Hoff and Lieutenant Glennan, of the Medical Department, who labored unceasingly in ministering to the wounded. Upon arriving at Pine Ridge agency, the wounded were placed in that part of the divisional field hospital of which I was in charge. It was my duty to attend and redress some twenty of the wounded, which occupied my time till two o'clock the following morning.

Very respectfully, your obedient servant,

CHARLES B. EWING,
Captain and Assistant Surgeon, U. S. A.

Now, to the consideration of the casualties, which I shall separate into the killed and wounded; of the former we had one officer and twenty-nine men, a total of thirty.

The great majority were killed outright, the very few surviving a variable time from a few minutes to a few hours after the reception of their injuries. Captain Wallace, besides the fatal gunshot wound of the lower abdomen, received two cuts with a tomahawk or hatchet; one across the forehead just above the superciliary ridges, and the other conforming to the anterior two-thirds of the sagittal suture. In neither case did these cuts fracture the skull.

This officer's death, coming as it did in the heyday of his career, was indeed a "tragedy." No words of mine can portray the love and admiration in which he was held by his family, friends and brothers-in-arms.

"His life was gentle; and the elements

So mixed in him, that Nature might stand up

And say to all the world, 'This was a man.'"

The greater portion of the dead I saw had received two or more wounds. In order that you may clearly appreciate the treatment of the cases to be presented, I shall premise by stating that my knowledge of them dates from the battlefield, on the morning of December 29, 1890, and ended, so far as three-fourths of them are concerned, upon their transfer to Fort Riley, Kan., January 4, 1891; remaining in charge of those whose condition could not permit of transfer at that time, till a day or two later, on which date I was placed in command of a company of the Hospital Corps.

The wounded consisted of two officers, twenty-nine enlisted men, and one civilian interpreter, attached to the scouts. I shall classify the above, broadly speaking, according to the part of the body injured, leaving out of detailed consideration twelve cases of gunshot wounds, mostly of minor import, which did not come under my care.

In brief, then, we have gunshot wounds of the head, body, upper and lower extremities.

We will now consider the wounds as classified, taking up those of the Head, three in number:

CASE I. Private H. D., Troop A, Seventh Cavalry. Pistol-ball entered right side of face half an inch anterior to lower part of right meatus auditorius externus, passing transversely through bones of face and obtaining exit two and one-half inches anterior to lower part of lobule of left ear. Calibre of pistol not known, but from size of wound of entrance, think it about a .38. Discharge of blood from both ears, and persistent flow of saliva, the latter giving evidence of the wounding of Steno's duct. A violent cellulitis supervened, which

finally subsided under treatment, and he was in excellent shape when transferred.

CASE II. Gunshot wound of inferior maxilla. Quartermaster-Sergeant C. C., Seventh Cavalry. Ball entered left inferior angle of chin, passing transversely through body of inferior maxilla, with inclination downward, gaining exit at right inferior angle of chin, crushing and comminuting bone in its passage. Treatment consisted of removing broken particles of bone, with corresponding teeth; stitching the lacerated integument of chin; applying antiseptic dressings; felt splints and bandages to support chin. This man was doing as well as he could under the circumstances when transferred. I understand that he has since had false teeth and plate made.

CASE III. Incised wound of nose. Mr. W., Indian interpreter attached to Company E, Indian Scouts, had all that part of nose anterior to nasal bones slashed off with a knife in the hands of an infuriated Indian of Big Foot's band. The severed part was hanging by a mere shred and bleeding profusely. Fifteen minutes after reception of wound, I replaced nose, and held same in place with numerous silk stitches. This man immediately after the operation, took his Winchester and went at once to the skirmish line, and afterwards on our return to Pine Ridge agency, took his place in the advance with Lieutenant Taylor's Indian Scouts. I did not see Mr. W. for some days after operation, when I found good union, and removed stitches. This, if it can be so dignified, was the only operation performed on the field.

I now come to Gunshot Wounds of the Body. Under this heading we have five cases:

CASE I. Penetrating gunshot wound of chest. Private J. C., trumpeter Troop K, Seventh Cavalry. Ball entered two and one-half inches below and one inch from left nipple toward median line, passed transversely in straight line, gaining exit two and one-half inches below right nipple. No rise of temperature, and patient in good condition when transferred.

CASE II. Sergeant H. H., Troop A, Seventh Cavalry. Ball entered posterior surface of left chest, passed forward, coming out just internal to the left nipple. Besides the above, Sergeant H. suffered two additional gunshot wounds, one above and the other below left elbow. Pneumonitis supervened.

CASE III. Sergeant L., Troop I, Seventh Cavalry. Ball entered to right of sternum just below clavicle, passed backwards and outwards, obtaining exit at axillary line in the fifth intercostal space, where incision was made, and the ball removed, with pieces of blouse and fragments of undershirt. Pneumonitis followed.

In considering the treatment of the cases coming under this particular heading of Penetrating Gunshot Wounds of the Chest, I should like to mention the cases of one officer and two enlisted men, who suffered gunshot wounds of like character in an affair with Chiricahua Apaches at Chevelon's Forks, Ariz., July 17, 1882.

The treatment of all these cases was alike, with recoveries in all of them. It was as follows: thorough cleansing of wounds; application of corrosive sublimate solutions; iodoform powder dusted upon parts; antiseptic dressings just sufficient to cover each particular wound; then the application of collodion, sealing part "hermetically" or by what is known as primary occlusion; finally restraining the muscles of respiration by circular bandages of chest, and fixing arm of

side affected. I do not wish to place myself on record as treating all penetrating gunshot wounds in this way, but simply present my experience to your consideration for what it is worth. I am quite of the opinion that I should modify my treatment by substituting the plaster-of-Paris bandage, with the flannel roller, for the circular cotton bandages, to restrain the muscles of respiration.

This treatment by primary occlusion may seem very radical indeed, when such an authority as Ashurst says, "The vast majority of penetrating wounds of the chest are gunshot injuries, the exceptions incised or punctured wounds. Applying the ordinary principles of surgery, even to the exceptional group, nothing but absolute necessity would justify the complete closure of the wound." And again, "Surely the conditions of a wounded lung and thorax are unfitted for the experiment of closure." And further, "Nothing appears more repugnant to the principles of surgery than the attempt to close a bullet-track which, however it be placed, under its ordinary conditions must afford ample material to be discharged externally." I quote the above to present the other side of the question as well as my own. I think this kind of dressing for chest wounds would become very necessary, particularly where traumatic pneumonitis has been set up, which would preclude the constant change of dressings and the consequent exposure of the chest at those times. The consensus of opinion among military writers is that the least fatal injuries are those in which the projectile has passed entirely through the chest, being less injurious than those in which the bullet has lodged. While my cases are few, the results are certainly very satisfactory, when we consider that during the last two years of the war, the death from penetrating wounds of the chest reached almost 33 $\frac{1}{2}$ per cent.

CASE IV. Gunshot wounds of vertebrae, upper and lower extremity. Private —, Troop B, Seventh Cavalry, suffered four distinct gunshot wounds: one passing transversely through lumbar vertebrae from left to right, crushing and comminuting vertebrae and severely injuring the cord and its membranes, and finally lodging in the muscles of the right lumbar region; penetrating gunshot wounds of right and left arms below elbow-joints; and the fourth passing through left leg just above ankle joint. It would not be economizing fact very much to say that this man was literally shot to pieces. The bullet which I now exhibit, weighing 385 grs., was removed from the right lumbar region by simple incision, without anesthetic, immediately after his arrival in the divisional field hospital at Pine Ridge, and, as Nature had not moulded him to resist three ounces of lead in this form and method of distribution, he died shortly afterwards. The injuries of this soldier were so severe that it was hardly expected that he would survive the journey from the battlefield to the field hospital, sixteen miles distant.

CASE V. Gunshot wound in neighborhood of right inguinal region. Lieutenant H. H., Light Battery, Second Artillery, received gunshot wound (Winchester) of right side, ball entering just external to anterior superior spine of right ilium and passed downwards and inwards. This officer was in charge of a Hotchkiss gun some six hundred yards distant from a party of hostiles that had gained the shelter of a ravine, and who were beset upon two sides by the fire of carbines and upon the third by Hotchkiss guns.

The gun in charge of this officer was moved from its original position upon an eminence to lower ground, so that better range could be obtained, rendering the fire more effective. This was so successful that the Indians sought to silence this particular piece, resulting in the shooting of Lieutenant H. The ball was deflected from its original course, seemingly a fatal one, by a watch worn at the time and which was completely destroyed. I saw Lieutenant H. when shot on the field; he fell under my care that evening at the field hospital; and the same night or the following morning I examined and dressed his wounds, at which time the course of the ball had been fully determined. Having a great deal of work on my hands, I was glad when relieved of this case by another medical officer. I understand Lieutenant H. has so far recovered from his injury as to be able to perform duty.

Let us now consider Gunshot Wounds of the Upper Extremity.

Sergeant H. H., Troop I, Seventh Cavalry, was admitted to the field hospital, Pine Ridge agency, December 29th, from the field where I first saw him. Ball entered just external to coracoid process of scapula, passed through deltoid muscle, finally entering the head of humerus. Severe. This man was treated upon the expectant principle till his transfer to Fort Riley on January 6th, for the following reasons: no appreciable rise of temperature; complained very little of pain; was able to sit up and walk about to a certain extent. Treatment consisted of securing thorough drainage of wound; absolute rest by appropriate position and posterior splints of felt or plaster-of-Paris (I have forgotten which); antiphlogistic regimen; hypodermic administration of morphia when necessary.

I find myself well supported in the above treatment by Billroth, who declares against operative procedures, under like conditions, as follows: "As in cases of resections, you can have no control as regards the protective functions of the arm, especially when a large portion of bone is to be excised, it is always better for the patient to escape with an ankylosed joint, without resection, than to have a dangling joint after resection."

Von Langenbeck says: "If it be true that ankylosis of the shoulder-joint enhances the usefulness of the rest of the extremity, and especially of the hand, we would be obliged, in shot-injuries of the shoulder-joint, to constantly strive for the accomplishment of ankylosis. The presumption that ankylosis would bring about greater usefulness of the arm than could be had with a shoulder-joint even with limited motion, rests upon a fallacy, occasioned by neglect to take into consideration the various degrees of severity of shot-wounds of the shoulder-joint." The same author cites nine successful cases of shot-wounds of the shoulder-joint treated on the expectant plan, the patient in every case recovering, "completely with conservation of good motion of the arm." He further says: "It is certain that the results of the cases of conservative treatment of shot-wounds of the shoulder-joint above cited challenge greater attention to the side of conservative surgery."

Two of the cases under this heading were gunshot injuries in the neighborhood of the shoulder-joint, one of them made by a Winchester 38, and the other by a gun of larger calibre. Both cases were given complete rest by means of splints and position; drainage

of wounds; antiphlogistic regimen, and opium in cases of pain, which complaint was rare.

No symptoms up to the time of transfer to warrant operative interference. I am quite of the opinion, however, that if the temperature, pain, etc., had so indicated, I should at once have made an exploratory incision, and an exsection or amputation, according to the conditions in each particular case; but up to the time of transfer to Fort Riley, there occurred nothing to warrant such procedure.

Gunshot Wound of Upper Extremity.

Lieutenant G., Troop G, Seventh Cavalry, received a shot which entered olecranon process of right ulna, comminuting that part, passing forwards through shaft, and gained exit at the posterior surface of arm, at junction of inferior with middle third. Treatment consisted of removing portions of bone; applying antiseptic dressings, and supporting arm. This case was turned over to another surgeon the day following his arrival at the field hospital. I have since learned that this officer has rejoined his regiment.

Gunshot Wound of the Right Hand.

Private F. L., Troop B, Seventh Cavalry. Ball entered internal border of wrist, and passing through comminuted bones of same, coming out on palmar surface at base of thumb. Wounds cleansed, dressed antiseptically, and given rest by application of splints. This man was transferred in good condition.

Gunshot Wounds of Lower Extremity, consisting of two of thigh, one of knee and two of leg.

CASE I. Private Wm. H. G., Troop C, Seventh Cavalry, while mounted, received a gunshot wound which entered middle of posterior surface of left thigh, at junction of middle with upper third, ranging slightly downward (missed femur), passed forward and inward, obtaining exit at about middle of internal surface. Wounds were cleansed, dressed antiseptically, and when transferred patient was about well.

CASE II. Private E. S., Troop C, Seventh Cavalry. Gunshot wounds of right and left thighs. Ball entered inferior surface of left thigh, ranged upward in front of femur, passing out at internal border of anterior surface at junction of middle with upper third; this ball continuing its course entered internal border of posterior surface of right thigh, and ranging transversely behind femur, passed out at middle of upper third of external border of posterior surface. Treatment consisted of thoroughly cleansing wounds, using bichloride of mercury solutions and dressing antiseptically. This man had about recovered when transferred.

CASE IV. Private G. E., Troop K, Seventh Cavalry. Gunshot wound of right leg, middle third. This was a very severe compound comminuted fracture of both tibia and fibula, with much destruction of the soft parts, including a division of both anterior tibial and peroneal arteries. Am of the opinion that this was a case of primary infection. Thirty-six hours after entrance into field hospital it was decided to amputate limb. I performed the operation, assisted by Surgeons Hartsoff and Spencer, United States Army, under rather unfavorable auspices. A Sibley tent with the earth for a floor served as an operating-room, which is very unsatisfactory, inasmuch as your light passes to you through a mere "chink" of a door, and the tripod which supports the central upright pole of the tent permits very little room for the operating table, assistants and tables for antiseptic

fluids. Then again, you may sprinkle your floor assiduously with water, yet those moving about run great risk of stirring up clouds of dust. Patient was placed under chloroform and a lateral flap amputation was performed, four inches below knee-joint, under antiseptic conditions so far as they could be obtained. Leg was found as described above; flaps were brought together, permitting of the best drainage. Treatment then consisted in supporting patient, and using persistent antiseptic irrigation of the stump, but despite all our efforts, the products of the staphylococcus pyogenes were formed abundantly, and the patient succumbed to pyæmia resulting from a primary infection upon the battlefield.

Now, to sum up, we have reviewed: Gunshot wounds of the head, three cases; of the body, eight, including the three cases quoted; of the upper extremities, six; and of the lower, four; making a total of twenty-one cases.

The difficulties of the situation, as they appeared to the medical director of the department, Colonel Baché, can be learned by a reference to his own language when he says: "Had that regiment (the Seventh) been operating at a distance from support or organized assistance instead of having a receiving hospital within easy reach, it is not hard to cast the sum of its suffering." In comparison with the difficulties met with in this instance, in which there were three (although the medical director says two) medical officers, and four hundred and ten men to care for, thirty-one wounded, I would like to place for a moment those met with and successfully overcome, in an affair in which I played a part some years since upon another field.

My memory recalls the battle of Chevelon's Forks, (Ariz.), the 17th of July, 1882, where the fighting strength of the Chiricahua Apaches was about the same as that of the actual Indian combatants in this affair under consideration; the opposing forces being two troops of the Third and one of the Sixth Cavalry, under Major Evans and that brilliant cavalryman, Captain Chaffee, respectively. These Indians were the most warlike in the entire Southern country, and among them were the renegade scouts that had turned against General Carr's command at Cibecue Creek, Ariz., the year before. The engagement was a sanguinary one, the Indian foe holding a very inaccessible point in the mountains some five or six hundred feet high, with precipitous sides except upon the south, which, while permitting the approach of our forces, was so strongly fortified and the Indians so well armed and such good marksmen, that this line of approach was exceedingly dangerous. The casualties were two officers and twelve men wounded and two men killed. The Indians lost fifteen killed, (left upon the field), and a number of wounded carried off under cover of darkness. The Indian camp was captured, and with it two Indian squaws and two children; one of these squaws suffered a very severe gunshot wound of the right leg, which made amputation necessary. I performed this operation at once, upon the field, using as an operating-table a box placed upon the ground, which was at that time covered with three to four inches of hail, having plenty of spectators in the shape of soldiers. This case with seven others, we carried by hand on rude litters fashioned from the branches of the pine tree, for a distance of fifteen miles, such was the roughness of the country. Upon gaining the table-land of the Mogollon Mountains, where a comparatively smooth country was

found, mule litters were made, upon which the more serious cases were placed, and carried ninety miles to Whipple Barracks. The lamented Crawford was detailed with two troops of cavalry to help me out of the mountains with the wounded, and his men acted as litter-bearers, relays being necessary every two or three hundred yards. This task, from the roughness of the country and the rudeness of the litters, was found not a very agreeable one. Our base of supply in this instance was fifty miles distant, whereas in the affair under consideration it was only sixteen. The difficulties were really not great, and I can only recall one case in which I thought the operation of amputation of the limb should have taken place on the battlefield rather than at the field hospital twenty-four to forty-eight hours later.

This unfortunate battle provoked another hostility upon the following day, in the shape of the White Clay Creek affair. Such, however, was the masterly manner in which that gallant soldier, General Miles, controlled the situation, both by his comprehensive knowledge of the art of war as indicated by the disposition of troops and his clear insight into the Indian character, that he prevented what at one time threatened to become a serious Indian war. Peace as well as safety was again assured the settlers of that sparsely populated country, a month after the arrest of Sitting Bull, by the surrendering of nearly 4,000 Sioux Indians at Pine Ridge agency, February 15, 1891. The entire sentiment of the country is well voiced by no less a personage than the President of the United States, in his last annual message, when, in speaking of General Miles, he says, "*He is entitled to the credit of having given thorough protection to the settlers and of bringing the hostiles into subjection with the least possible loss of life.*"

It is not surprising that the casualties of the foe, as well as ourselves were great, when we remember that the fire-arms used were those of largest calibre at close range. The Sioux were armed with three different kinds of guns, namely, Winchester of pattern 1866 and calibre 45; Winchester, calibre 38; and the Springfield carbine, calibre 45. The principal weapon was the Winchester, calibre 38, together with very few of the other patterns mentioned.

The United States troops were armed with Springfield carbines, calibre 45; weight of bullet 400 grs., composed of lead and projected by 55 grs. of powder. The wounds resulting from the above were sinuous and irregular, with lacerated edges; and the apertures of exit were frequently much larger than those of entrance. Fragments of clothing, splinters and pieces of lead were at times left in the wounds by the bullets, which, when permitted to remain, frequently led to long and obstinate suppurations (as instanced in the Indian wounded), often rendering secondary operations necessary. These bullets, by reason of the malleability of the metal (lead) of which they are made, are expansive; they easily lose their regular form and "mushroom," readily bursting into fragments upon contact with a hard body. By reason of the above, wounds of blood-vessels are more frequent, and attended with laceration, and the gravest of all dangers to the wounded on the battlefield hemorrhage. These wounds are further complicated by the splintering and not infrequently the complete shattering of bones.

I am of the opinion that three-fourths of the casualties of the opposing forces were received in what may

be termed the "explosive zone" of the projectiles' trajectories.

If, then, for the sake of illustration, we divide the trajectory of a small-arms projectile into three zones of action, indicative of the effects of its penetrating power on the human body, we should designate them as: (1) a "zone of explosion"; (2) a "zone of penetration"; (3) a "zone of contusion."

With record of the remaining velocity of the projectile, at successive stages of its trajectory, which it is perfectly possible to have with fair accuracy; and with an assumed value of the work of penetrating the average human body, which assumption could be made within reasonable limits of error; and with an assumed value of the remaining velocity after penetration, the projectile reappearing to leave a wound of the explosive type, which would be a very vague assumption,—accurate calculations of the zones could be made, but the result could be no better than the assumed data of the problem. Looking to experience, for the zones of the Springfield rifle, the wounds at the Wounded Knee fight, mostly within 100 yards range, were distinctly of the explosive type. The wound of Lieutenant Hawthorne, delivered at 300 to 400 yards, just failed of this type. I have seen, at target practice at known range, the body of a man perforated by the Springfield bullet at 1,000 yards, and my memory retains no note of the wound of exit being of remarkable character; from which I infer that this range is well within the zone of penetration. I shall therefore estimate these zones, for effective range of 2,400 yards, to be as follows: explosion, up to 250 yards; penetration, thence to 1,200 yards; contusion, thereafter.

The discussion of the zones of "explosion," of "penetration," and of "contusion," is a mixed one, involving both mechanics and physiology. Its mechanical features are essentially as follows: a very rapidly moving projectile practically shatters and destroys the material opposed to it, and makes a clean hole, as a pistol-bullet through a pane of glass, or as the entering bullet in the familiar type of gunshot wounds. A projectile of less velocity tears or breaks the material opposed to it, as a bullet thrown from the hand against a pane of glass, or as the issuing bullet in the ordinary gunshot wound.

The "zone of explosion" for any given piece is that part of its range in which the projectile has so great velocity that its loss of speed by penetrating the body of a man still leaves such velocity as to make the wound of exit similar in character to that of entrance; the loss of velocity by the work of penetration is so great that this zone is very narrow except for pieces of great power.

The "zone of penetration" for any piece is that part of its range in which the velocity of its projectile is such that it perforates the human body, but the loss of velocity in doing so leaves the projectile unable to make the wound of exit similar to that of entrance. This zone makes up the important effective range of most fire-arms.

The "zone of contusion" covers the whole range from the last to the harmless "spent ball." Much of it is still effective range.

The penetrating power of the projectile varies directly with its weight, directly with the square of its velocity. The resistance of the human body may probably be taken to be proportionate to the area struck, that is, to the square of the calibre.

In comparing the more modern arms with the Springfield rifle, the higher velocity and the less area of resistance more than counterbalances the less weight of projectile, and the "zone of explosion" confined to a very short range in our arm, is with them a considerable part of their effective range. We are neither keeping pace with the humanity of nations nor increasing the effectiveness of our army, by still holding on to the antique, single-loading Springfield rifle, calibre 45.

This old-fashioned gun cannot be compared to that of France, the weapon of Germany or that of Austria; and while our arm possesses a larger calibre than that, I think, of any other civilized nation at this time, it cannot be classified with such old calibres as those of 68 and 72 (the latter known as the Minnie carbine), carrying projectiles that weighed as much as 740 grs. We find, however, a gradual change for the better, as in the last Franco-Prussian war the Germans were using an arm with projectile weighing 478 grs.; twenty-two grains less than our own. The French, upon the other hand, were armed with the Chassepot, calibre .43, carrying a bullet weighing 385 grs. The Gras, which superseded the Chassepot in 1874, did not reduce the calibre or weight of bullet. The real advance was made, however, in the direction of increased velocity and reduced calibre, when the Lebel was adopted. Germany kept pace with France in substituting the Mauser model (1888) for that of 1871-84; and Austria followed suit by arming her troops with the Mannlicher.

Now, to sum up, from the standpoint of ballistics, the modern arms mentioned are superior to ours by reason of possessing (1) greater initial velocity, (2) flatter trajectory, (3) greater accuracy, (4) greater penetration, (5) greater range.

Added to these qualities, we find the quantity of powder lessened, the weight of projectile decreased, and from a financial view less cost of the arm as a whole. The most interesting phase is presented, however, when we consider this matter from a surgical aspect. Chavasse and Delorme are of the opinion that all wounds received in the space between three hundred and nine hundred yards, are equally dangerous, but this is not concurred in by Chauvel, who contends that the explosive effects are as frequent in arms of small calibre. Dr. Noel, in the *Medical Bulletin* of February and March, 1891, says, "The disorganization of the soft parts is so extensive and the loss of tissue so considerable, that in general all reparation is impossible and a considerable sacrifice, is rendered unavoidable." "The zone of penetration," however, presents a more marked difference; here the bullet, as a rule, maintains its shape; the wounds of entrance and exit are more equal; the fluids of the body are not thrown violently toward the periphery, as in the case of balls of large calibre, and the edges of the wounds are not bruised or lacerated, but look as if the integument had been "punched out." As we have stated, the bullet does not change its form, except in very rare cases, so that fragments of clothing and foreign bodies are not usually left in the track of the wound; hence consequent suppuration is not to be feared. It is said that union is, as a rule, to be expected by first intention; the period of recovery will be shortened; paralysis or extensive shock rare; gangrene less grave and infrequent. Bones will not suffer fracture to the extent heretofore known, as they will

be pierced in their entirety, and the fissuring and splintering will not be so extensive. Blood-vessels and nerves will run less risk of being struck proportionate to the reduced diameter of the projectile, consequently hemorrhage will not be so frequent, and the wounded in better position to await for first aid. In the "zone of contusion" we will find either simple contusions or contused wounds, their gravity diminishing as the bullet reaches the end of its trajectory, thereby losing its force. Periostitis, abscesses and exfoliations will ensue at times where bones have been struck, but these form the most serious cases, for generally we will find mere extravasations of blood into the connective tissue. The optimistic picture just drawn portrays what is thought by some of the French and German writers upon the subject of their respective arms; but this is not shared in by Billroth, who recently spoke to a question relating to the reorganization of the army medical corps of the Austrian army. He is of the opinion that the modern small arm will aggravate suffering and slaughter in the battle of the future, and informs us that as eighty per cent. of all wounds result from rifle-balls, fifteen per cent. from heavy guns, and five per cent. from cavalry weapons, surgical attention must be devoted principally to the infantry projectile. Accurate statistics of the war of 1870-71 show that comparatively few were killed by artillery.

Speaking of the maneuvering at a distance which the long range of the modern arm will lead to, he says: "A collision must come sometime, and then what will the effects of the new rifle be? Bullets that formerly stopped at the bone will pierce it, and perhaps two or three other bones; the number of the severely wounded will be rapidly increased, and the armies will dwindle rapidly."

"In consequence of the greater length of range, the wounded must be treated at a longer distance from the enemy, say four hundred paces further than heretofore. Moreover, with the quicker movements of the troops comes the necessity for the quicker moving of the field hospitals. The number of porters of the wounded, already too small in the Austrian army, will have to be largely increased; in fact, many wagons must be drawn up immediately behind the line of battle to carry off the injured."

After dwelling upon the increase of the mortality to result from the use of smokeless powder, Professor Billroth continued to speak very disparagingly of the stretcher service in these words: "At Gravelotte St. Privat there were 5,000 dead and 15,000 wounded. Two-thirds of the latter were only slightly wounded, and were carried off by railway. For the severely wounded, when we calculate that two porters with one stretcher made the trip of 500, 600 and 700 paces ten times during the eight hours of battle, we find that for the Germans alone 500 stretchers and 1,000 porters were necessary. We have left out of all consideration the French, for whose severely wounded the Germans, as victors, had to care. This at least doubled the requirements, so that 2,000 porters and 1,000 stretchers were needed. This shows how entirely impossible the whole stretcher service is."

Doctor.—H'm! You are run down, sir. You need an ocean voyage. What is your business?

Patient.—Second mate of the *Anna Marie*, just in from Hongkong.—*Brooklyn Life.*

IS IT EXPEDIENT TO HAVE A PHYSICAL EXAMINATION OF MEN BEFORE ENLISTING THEM IN STATE TROOPS?

BY HERBERT L. BURRELL,

Lieutenant-Colonel and Medical Director, First-Brigade, M. V. M.

In the title of this paper I have used the word expedient, believing that all persons interested in State troops recognize the propriety of a physical examination. The difficulties which present themselves in carrying such a measure into effect in the States with which I am familiar are the following:

(1) The expense involved in conducting such an examination.

(2) The annoyance to the citizen of being rejected, and the influence that a rejected recruit may have in deterring other enlistments; hence, added difficulty to the company-commander in keeping up his enlistments to the required quota.

In the State encampments which I have visited, I have been impressed with the necessity for a judicious discrimination being exercised by some medical officer in making enlistments. In my own Commonwealth the militia of the State includes (Sect. 1, Chap. 411, Acts of 1887, Mass. Militia Laws) "every able-bodied male citizen resident within this State of the age of eighteen years or under the age of forty-five." This constitutes the persons subject to military duty. "The active militia (Sect. 21, *ibid*) shall be composed of volunteers, and shall be designated the Massachusetts Volunteer Militia, and shall first be ordered into service to resist invasion, to quell insurrections, to aid in the suppression of riots, and to aid civil officers in the execution of the laws of the Commonwealth, or in time of public danger."

This gives us two distinct services for which the militiamen can be called upon to act; first, to resist invasion; and second, as an aid to the civil authority in enforcing the laws. It would seem that all men would recognize that a force to be used for either of the above purposes should be free from any serious imperfection. Is that the case in the National Guard in my own Commonwealth? I regret to say that it is not. The personnel of the militia in Massachusetts has steadily improved during the last twelve years. Not only have active, more able-bodied men been enlisted, but more influential men have officered the State troops. Drill and discipline has steadily improved; but there has been no movement in the medical department towards an examination of enlistments. In the report of the Adjutant-General of Massachusetts, which will soon be published, there is recommended a recruiting standard, as follows:

"A recruiting standard should be established, to prevent the enlistment of men unfit for military service. No youth of immaturity should be accepted, nor should a man be enlisted because of his giant proportions."

This recommendation assumed the importance of a general order (No. 1), which was issued January 13, 1892, an abstract of which is, "Enlisting and muster ing officers will be assured of the good physical condition of recruits before enlistment and muster into the service, and no man of abnormal proportions will be accepted."

The State of New Jersey has taken a step farther.

¹ Read before the Association of Military Surgeons of the National Guard at St. Louis, April 21, 1892.

On March 29, 1892, in General Order No. 2, "The following resolution, adopted by the State Military Board and approved by the governor and commander-in-chief, is published for the information and guidance of the National Guard:

"Regimental and battalion commanders are authorized, whenever they deem it expedient, to send any recruit before the surgeon or assistant surgeon of their commands for physical examination, and upon report being rendered that he is unfit for service, his application for membership shall be rejected."

Owing largely to the efforts of Major Marion in my own State, there has been introduced in several of our regiments an athletic association; competitions have been held, and the time has come for a physical examination of recruits.

The brigade in which I have the honor to serve as medical director was mobilized one cool October day at Worcester, which is in the centre of our State. Nearly twenty-five hundred men were brought into the city of Worcester; carried out the work of the day; which consisted of drills and regimental movements, a street riot drill, and a four-mile march. During this march there were twenty-eight men from the brigade who were assisted by the ambulance corps, some of whom were obliged to ride in the ambulance. Many of these men were disabled by temporary illness; but a number were physically incapacitated for serving as guardsmen. They were the following: Five men had serious flat-foot, which they confessed incapacitated them from walking long distances; three men had varicose veins, two of them having large varicose ulcers on their legs; and four men had serious cardiac disease, two having loud aortic murmurs. These twenty-five hundred men were mobilized in a large city. The discipline could be termed almost perfect, for not an arrest was made for disorderly conduct.

In a company of cavalry in one of the New England States some ten years ago, on a warm June day the troops were mounted and rode about twenty miles. The battalion started with seventy-two men. When they arrived at their destination, there were sixteen men rode into the camp-ground; the rest for various reasons, among which a fair proportion of bad horsemanship should be considered, had stopped by the wayside, shipped their horses forward, and came on by train. The next day it was estimated by a medical man that only eighty-five per cent. of this force would have been able to stand three days' campaigning.

Numerous instances of confirmed epileptics have been brought to the brigade hospital during our annual encampment in Massachusetts.

At one of the smaller State encampments in the East, there was discovered a man, who had been enlisted a fortnight before camp, who had a hard chancre of the lip. This was, of course, a constant menace and source of infection to every man in the company mess. The man was promptly discharged when the disease was recognized.

It is a perfectly fair question whether a physical examination of recruits is not a matter of ordinary safety to the individual and to the State itself. Numerous cases have been brought before the Military Committee of our State legislature for compensation received for injuries. In one instance in the past year a man has claimed that his eyesight was destroyed on duty, and has received an annuity of two

hundred dollars a year for five years. In 1887 a man with epilepsy enlisted and had a sunstroke, from which his friends claim that he became insane. The State is now paying his wife an annuity of two hundred dollars a year for five years.

A physical examination would be a great protection against fraudulent claims against the State. How easy it would be for a man with a hernia to enlist in the artillery, and after riding on the hard caissons to claim that he was ruptured from this service, and bring a bill for compensation against the State. My own belief is that such an examination would not alone be of benefit, but is almost an absolute necessity. The State of New York has recognized the importance of this subject by issuing a general order, directing a physical examination of all recruits before enlistment.

The question of expediency is one of tact. It is not necessary to adopt so strict a physical examination for State troops as in the United States Army. The guardsman is a volunteer; but any serious defect in his physical condition which would prevent him from doing full duty to the State, or injuring himself by performing the duties of a guardsman, should cause his rejection.

I think that all recruits before enlistment should be examined by a medical officer, and that after consultation with the company-commander he should reject those found unfit.

The reason for this introduction of the company-commander into what at first seems a purely medical question, is one of expediency. Recruits as they are enlisted into companies often come in batches. John Smith and Tom Brown will go into the company if Frank Jones, who is the best fellow in their crowd, goes in. This may seem a departure from a standard of medical requirements; but to the line officers and company-commanders it is a condition requiring consideration. If Frank Jones is rejected because he has a varicose which does not interfere with his occupation, the State may lose the services of John Smith and Tom Brown. This is looking at it from the company-commander's standpoint.

The advantages of a medical examination of troops can, I think, be made quite evident. If the State pays for the services of able-bodied men it is our duty as officers to see that she receives an equivalent. A man who is incapable of sustaining the fatigues of a four-mile march would be an incubus upon the rapid movement of troops, and in all future uses of State troops rapidity of movement will be an important consideration. Every officer who has campaigned knows that the sick are the greatest impediment to the movement of troops. A body made up of integral parts has the strength of the weakest, not of the strongest. Efficiency of recruits, not numbers, should be the guide. At present the State pays annuities for (alleged) permanent injuries. The amount of money expended for this purpose would nearly pay for a systematic examination of massed recruits.

The advantages of this system are the following:

- (1) The securing for the State of able-bodied men, and its protection against fraudulent claims.
- (2) The eventual improvement of the *esprit de corps* of organizations, by establishing the principle that only sound men can be members of the National Guard.
- (3) The knowledge of the civil authorities, that,

when they call upon the reserve strength of their State for the enforcement of laws, they will not be leaning upon the staff of a bruised reed.

TREATMENT OF TONSILLAR HYPERTROPHY.¹

BY JONATHAN WRIGHT, M.D., OF BROOKLYN, N. Y.

An apology for bringing up again the question of the treatment of tonsillar hypertrophy can best be made by an explanation. While there are many well-known and almost universally conceded facts in the question, these very points, in many discussions, have been dwelt on to the almost entire exclusion of certain matters of detail which possess a more lively interest for those who annually see a large number of throat cases. The hope of giving more prominence to these points forms my apology for the resumption of a discussion already exhausting and in many directions exhausted.

On a reference to *Sajous' Annual* for 1891 (Vol. IV), it will be found that statistics, as far as they go, show that hemorrhage of a serious character occurs after tonsillotomy, about once in 3,000 cases (or exactly as stated there, 7 to 20,000.) This ratio is made up from a consideration of all cases, without distinction; and this may, and undoubtedly has, given rise to great misapprehension. A year or two ago I had the records in the surgeon-general's office searched for certain facts concerning tonsillar hemorrhage. In twenty-five years it was found that 31 cases of serious hemorrhage had been reported. In nine of these cases the age was not given. Two cases were in children, of which one was a haemophile and one was a case of abnormal course of the internal carotid artery. The other 20 cases were all eighteen years of age or over; therefore, although Moure has lately published a case of hemorrhage in a child from abscission during acute tonsillar inflammation, we can practically rule children out.

I have no way of accurately knowing how many more children have their tonsils cut than adults. For the sake of argument, let us say we do one tonsillotomy in an adult to twenty in children. Exactitude in figures is neither possible nor desirable here; and you will all admit, I think, that this assumption is not far enough out of the way to invalidate the argument. To obtain the ratio of adult hemorrhage after tonsillotomy, therefore, we must divide 20,000 by 20; this then would give us a proportion of 7 to 1,000, or about one case of hemorrhage to 150 adult tonsillotomies. I leave it to your individual opinions to say whether this is a ratio to be regarded in deciding the question.

Personally, I have very little respect for statistics in medicine; every case is to be considered on its own merits. I have only brought forward this statistical argument, so often urged, to show its fallacy. If every case were reported, I believe the figures would be still less favorable to the cutting of adult tonsils. Of course, opinions must necessarily differ as to what is serious hemorrhage. It is always difficult to estimate the amount of blood lost, mixed as it is with saliva and mucus, and much of it swallowed. What is a trifling loss of blood to one patient may be very serious

to another. The personal factor both of patient and operator is to be considered.

Before leaving this part of the subject, I would like again to draw attention to the fact that two cases of death from tonsillotomy are on record in the thesis of Ricordeau, as occurring in the practice of the French surgeon Broca. He also mentions two other cases as occurring in the practice of Cheselden. It is folly to deny that death may occur from tonsillotomy; it is folly also to dwell on these few cases as any argument in themselves against tonsillotomy, any more than against the use of ether or the dentist's forceps because occasionally some one dies during ether anesthesia or from hemorrhage after a tooth-pulling.

Dr. Delavan, at the last meeting of this Section, said that the advocates of the galvano-cautery treatment of tonsils should state more clearly the cases which they select for it, and intimated that more people would then agree with them. If any one will read the papers of our Chairman, Dr. Charles H. Knight, on the subject, or my own more feeble presentations, even with moderate attention, they cannot fail to see that we have never, from the first, advocated its use in children where the cutting operation could be used. On reviewing these statements, I cannot see how, without brass bands and flaming transparencies, they can be made more emphatic or how the English language can make their meaning clearer.

I will not repeat the rules which our Chairman has laid down for the use of the galvano-cautery, with which I am in thorough accord, but I think it wise to go a little further and exclude the cutting operation in all patients past eighteen years of age. This conviction arises, not so much from the evidence of the somewhat battered statistics just mentioned, as from the common experience of others and from our knowledge of tonsillar pathology. (I myself have never seen a case of excessive tonsillar hemorrhage.)

It is impossible to tell by feeling or by inspection in an adult case what the vascular condition of a tonsil is at the place through which the incision is to pass. Parenchymatous oozing is more frequently the form of hemorrhage than the spouting of blood from an arterial twig. The fibrous tissue of an old tonsil is more often found in the deep layers than near the surface. Deep down, also, is where the arterial twigs are found. The surface is, therefore, not a safe criterion of the deeper tissue.

Galvano-cauterization is the most commonly employed alternative to the cutting operation. The use of the cautery point should be reserved for those tonsils around which the loop of the cautery snare or of the galvano-cautery tonsillotome cannot be adjusted; but I do not understand the statement made by many, that it takes from thirty to fifty sittings to reduce large tonsils by ignipuncture. Seven to ten is the usual number in my experience, while the largest and most refractory tonsils I have ever seen were reduced in fifteen sittings. The production of pain at the time of the operation, as well as subsequently, can nearly always be entirely avoided by the use of cocaine, and by being careful to confine the cauterization entirely to the lymphoid tissue. The same care and precaution will, I believe, largely prevent the formation of annoying cicatrices. The spiral-wound porcelain buttons for sale in the shops, it seems to me, should never be used, either in the throat or nose; they are clumsy articles, and from their size are sure to produce not

¹ A paper read to reopen discussion of the subject before the Laryngological Section of the New York Academy of Medicine, March 23, 1892.

only pain but must leave behind bad cicatrices. The slender cautery point should alone be used for this work, I believe. It is unnecessary to speak further of the technique of cauterization of the tonsils, although there are, of course, many other points than those here mentioned to keep in mind. One who has not devoted special attention to throat work, we know, has no business to poke around in a patient's pharynx with a hot platinum point.

Abscesses and diphtheria as mentioned by some speakers, I have never seen, though I am willing to admit their occasional occurrence after the cauterization of tonsils, as well as after tonsillotomy. Astringent or antisepic gargles should always be prescribed after each cauterization or tonsillotomy, not so much for astringency or antisepsis as for pharyngeal gymnastic exercise.

The cold snare, electrolysis, caustics, incisions, and other substitutes for the cutting operation other than the cautery, I leave to the consideration of those who have had more experience with them than I.

In a child of eight or ten years of age, two symmetrically-rounded tonsils, free of the faecal pillars jutting into the oral pharynx, presents to the young laryngologist a temptation only second to that of a rosy-cheeked, juicy apple in a neighbor's orchard to the enterprising small boy. Those tonsils are usually sliced off in a way that delights the heart of the operator and fills the child's mother with wonder and admiration. The after-effects are as brilliant and satisfactory as the operation itself.

Quite a different affair are those flat, ragged tonsils which project but little or none at all beyond the somewhat bulging anterior pillars. Their area is extensive. Their edges slope off gradually and join with the general lymphoid infiltration of the surrounding mucous membrane, angry, red, and covered with slimy mucus. This condition is certainly seen almost daily by most of us, both in children and adults, and I am sure that there are many beside myself who want to know how this condition of affairs is to be remedied by any cutting operation. I hope, more for the sake of information than of argument, that this question will be answered by those who never use the galvano-cautery in the throat. In children ignipuncture is almost attended with the greatest difficulty in these cases. A great amount of improvement can often be attained by removing the lymphoid hypertrophies from the post-nasal space where they are present. These cases are the ones, *par excellence*, in which we have to thank Dr. Bosworth for the introduction of his very useful and suggestive term "Lymphatism," where syrup of the iodide of iron in large doses is of great value.

Another question occurs to me. We are told by many that, when the tonsil is fast to the faecal pillars, we are to separate it by means of the blunt hook before tonsillotomy. In a certain very moderate proportion of cases, this can be done, where the adhesions are recent and easily broken up. In a much larger proportion of cases there is cohesion, not adhesion, to the faecal pillars. The lymphoid tissue making up the tonsil is continuous with the hypertrophied lymphoid elements in the surrounding mucous membrane. So intimately are they blended that it is impossible, without a microscopic section, to tell where tonsil leaves off and faecal pillar begins.

Again, for information, I would like to ask if there

are any so skilful that they can separate these structures in the living subject, one from another, with a blunt hook? I am perfectly ready to acknowledge that I am not able to do it, and am equally frank in saying I have never seen it done. To cut off the projecting portions and subsequently to trim down to a proper shape the distorted fauces with a galvano-cautery point, is the best I can do.

Dr. C. H. Knight has quoted Dr. Ingalls as very graphically saying that a child suffers about as much in anticipation of a tonsillotomy as an adult in anticipation of a hanging, and urges the use of anesthesia in children. Those who remember, and nearly every one with the right kind of heart does remember, the piteous look of terror on the little patient's face when he looks upon the gleaming steel of the guillotine, will be disposed to agree with him. On the other hand, the picture of the little victim about to be smothered with an ether cone, the terror and the struggles nearly always induced by this procedure, will also appeal to the soft-hearted operator. I am sure, as far as I am personally concerned, that the memory of one picture is just as vivid as the other. It takes just as much force to put the child under ether as it does to hold it for tonsillotomy. The struggle with ether is prolonged. The struggle in a tonsillotomy is short, sharp and decisive. Of course, I am speaking of children who do struggle in each case. There are children who take ether as calmly as they do their milk,—very few. There are children who open their mouths and never make a sound while their tonsils are being cut off,—not a few. I recently operated on a little six-year-old boy, before a class of medical students, who walked to the slaughter and conducted himself on the scaffold with all the *sang froid* of a Stafford or a Vane. A strong, firm assistant is, however, usually necessary. Occasionally a little tar-tar is caught, an infant John L. Sullivan, whose squirmings are entirely beyond control. The gentle-hearted operator will have to strap that youngster down to the table while the ether is being forced by artificial respiration into his lungs.

In other words, the choice between the two struggles usually simply comes down to the point of the most successful issue. In such a case etherization is easier than the tonsillotomy without it. As to the operation itself, certainly every one who has had experience with both methods must admit that with anesthesia the difficulties are greatly increased. The illumination of the pharynx becomes a matter of some difficulty. The tongue has to be controlled. It falls back into the pharynx or up against the roof of the mouth unless the patient is put in the upright position. The greatest difficulty, however, is in engaging the tonsils in the loop of the tonsillotome.

Without anesthesia, the "gagging" of the patient throws the mass toward the middle line and the pillars of the fauces are retracted from the tonsil back to their line of attachment. Not so in the unconscious patient. Even in primary anesthesia the muscles of the fauces and the external muscles of the neck are relaxed, and the tonsil which formerly projected beyond the pillars may and often does sink back between them. Pushing them inward by the hand at the angle of the jaw also pushes inward the pillars and the subjacent structures with them. The difficulty, of course, is very greatly increased where there is firm adhesion of fauces to the tonsil.

Hæmorrhage is always more profuse. In fact the only instance in which I have ever seen anything approaching even to profuse hæmorrhage was in an anesthetized child.

It is often necessary in these cases to also remove the lymphoid tissue from the pharyngeal vault. I think it preferable here to take out the tonsils without ether and wait a few weeks, even months, before proceeding to operate in the naso pharynx. Many a case of moderate post-nasal adenoid will be relieved by the removal of large tonsils,—the lymphoid hypertrophy in the vault will retrograde and give no further trouble. Where the adenoids are well developed, of course a subsequent operation will be necessary. In the double operation the blood from the amputated tonsils will flow into the naso pharynx and considerably embarrass operative procedures there. While it is frequently necessary, from reasons of expediency, to do everything at one operation under ether, I do not believe that this is, in the majority of cases, the procedure of choice.

If I have been a little emphatic in laying down personal views, it is done only in the desire of being contradicted and of thus exciting discussion. I trust others, having experience, will say something of the methods of controlling tonsillar hæmorrhage, and bring out more fully these matters of detail.

Reports of Societies.

AMERICAN PEDIATRIC SOCIETY.

THE Fourth Annual Meeting was held in Boston, May 2, 3 and 4, 1892.

FIRST DAY, MONDAY.—FIRST (AFTERNOON) SESSION,

The President, DR. WILLIAM OSLER, of Baltimore, Md., delivered the annual address, entitled

REMARKS ON SPECIALISM.¹

DR. AUGUSTUS CAILLÉ, of New York, then read a paper on

EXPERIMENTS AS TO THE VALUE OF NASCENT OZONE IN CERTAIN FORMS OF DISEASES OF CHILDREN, WITH DEMONSTRATION OF AN EFFICIENT GENERATOR.

Dr. Caillé had tested nascent ozone in the treatment of three cases of incipient phthisis, three of chlorosis in children and five of pertussis. He also included in his report three cases of pertussis and eight of chlorosis and anæmia treated with nascent ozone by other physicians. These inhalations were given by means of the apparatus of Labbé and Oudin. There were usually three inhalations daily, lasting about fifteen minutes. The conclusions thus far reached were as follows: That inhalations of ozone, by means of Labbé and Oudin's apparatus, had not been followed by noticeable ill effects; that daily inhalations of ozone increased the quantity of oxyhaemoglobin in the blood from one per cent. to four per cent. in a short time, and this increase remained stationary for some time; that in three typical cases of limited apex tuberculosis a local improvement was not obtained by inhalations; that in pertussis ozone inhalations had a very marked curative effect as regards the duration and severity of

the disease; that in chlorosis and anæmia ozone inhalations were exceedingly valuable from a therapeutic standpoint, and gave better and prompter results than any other form of medication known to the writer; that atmospheric disinfection was readily secured by means of the apparatus, making this of value in the treatment of scarlet fever, etc.

DR. CAILLÉ, in reply to questions, stated that in the cases of pertussis the treatment was instituted after the attacks had become frequent, and that the effect on the attacks was marked and immediate. He had not treated a case of pernicious anæmia in this way, but thought it would be of value in such cases. The examinations of the blood in the cases treated had been only with reference to the amount of oxyhaemoglobin.

DR. T. M. ROTCH, of Boston, thought this might prove a great advance in the treatment of cases of advanced anæmia which were so fatal in children. It was possible that some of the cases reported were on the verge of being pernicious anæmia, and had been cured.

DR. CAILLÉ, in answer to a question as to the immediate effect of these inhalations, said he had observed that the heart was slower and that the pulse was strong.

DR. FISHER, of New York, asked whether, in the cases of anæmia, the sputum had been examined for bacilli, and whether some of these might not be tuberculous.

DR. CAILLÉ, in reply, stated that no examination had been made in those cases, since there was no cough, and the diagnosis of anæmia seemed clear. He thought the patients with incipient phthisis who were in good hygienic surroundings and circumstances furnished a fair test of the efficacy of the treatment in such cases, and in these no local improvement resulted.

MANIFESTATIONS OF LA GRIPPE IN CHILDREN, by CHARLES W. EARLE, M.D., Chicago, Ill.

Dr. Earle dwelt especially upon the profound depression and marked effects upon the nervous system produced by la grippe in children in Chicago. The constitutional disturbance was very marked. He had seen more severe cases of diarrhoea and vomiting in the middle of the winter, during the epidemic of influenza, than during the middle of the summer during an epidemic of cholera infantum. He believed that as we had found that it was not the bacillus peculiar to diphtheria, but rather the products of that bacillus which produced the diphtheritic paralysis, so we should find that it was the products of the germ peculiar to influenza which produced the nervous manifestations of that disease.

DR. ROTCH, of Boston, said his experience in a large number of cases of grippe in children had differed from that of Dr. Earle. It seemed that the disease must have appeared in the West in a much severer form than in the East. The cases in children had been much milder than in adults. He had not seen fatal cases of uncomplicated grippe. It was being more and more acknowledged that grippe was a nervous disease affecting the sympathetic rather than the central nervous system.

DR. JACOBI, of New York, could not find that the symptoms of grippe in children were much different from those in the adult. If we distinguished three forms, namely, respiratory, nervous and gastric, the

¹ See page 457 of the Journal.

symptoms were principally respiratory or nervous, the nervous often very severe.

DR. CAILLÉ called attention to a peculiar cough resembling whooping-cough, which he had noted in a number of his cases. This cough lasted for two or three weeks in some instances, and did not get well without local treatment.

DR. L. EMMETT HOLT, of New York, said the cases he had seen had not been of the severe type described by Dr. Earle. In the New York Infant Asylum during the epidemic of two years ago scarcely any of the small children were affected. During the epidemic of last year, however, a large number between the ages of one and two were affected. There had also been a severe epidemic of pneumonia in which about two-thirds of the cases were fatal. In many of the cases there were none of the ordinary symptoms of influenza before the pneumonic attack. Whether this was to be looked upon as an epidemic of influenza with pneumonic complication, he was unable to say. It looked, however, as if the two had some relation to each other.

DR. S. S. Adams, of Washington, thought the epidemic had materially changed in many of its characters in young children in the past three years. He believed climatic conditions and locality influenced the type of the disease. Some of the cases had presented a peculiar rash or general erythema together with high temperature and the symptoms which usually accompany high temperature, so that at first the diagnosis of scarlet fever would be suggested. Many of the cases also were accompanied by so marked pulmonary congestion as frequently, in his judgment, to be mistaken for pneumonia. There might be bronchial breathing, slight dulness, high temperature, with decided initial symptoms, making it in the beginning a difficult matter to differentiate from pneumonia. In many of the cases in the last epidemic there had been decided symptoms of rheumatism, so that for a time the diagnosis was in doubt.

DR. BLACKADER, of Montreal, said that in Montreal there had been more cases of gripe in children in the last epidemic than in the previous one. The epidemic had been of a mild character, there being no deaths so far as he had seen in uncomplicated cases. He had observed the reflex cough to which Dr. Caillé had called attention.

DR. W. D. BOOKER, of Baltimore, had seen one case in which this peculiar reflex cough led to the diagnosis of whooping-cough on the part of the parents. The cough lasted two weeks, and was relieved by irrigations with boracic acid.

DR. T. M. ROTCH, of Boston, stated that he had observed this cough in some of his cases, and at first supposed it to be whooping-cough. He had also noted the rash to which Dr. Adams had referred.

DR. EARLE, in closing the discussion, spoke of the cases in which, at first, one apparently had to deal with a commencing pneumonia, but in which, after a few hours, all the signs of localized inflammation had disappeared and there existed an extensive bronchial catarrh.

DR. C. P. PUTNAM gave an account of an

EPIDEMIC OF ALOPECIA AREATA IN AN ORPHAN ASYLUM FOR GIRLS DURING THE YEAR 1891.

One girl had been attacked in January and another in March; and a little before the first of June sixty-one suddenly broke out with disease. The whole

number of pupils in the school was sixty-nine, the ages ranging from three to fourteen years. Six girls being found free from the disease at the end of June, were sent into the country to board, and they never showed any signs of the affection. The matrons and also four older girls who acted as assistant matrons, also escaped, though they were at times closely associated with the children.

The cases had been seen frequently by Dr. J. T. Bowen. Dr. Bowen and Dr. Putnam had also repeatedly examined the hair without finding any micro-organisms. The hair-roots were found to be atrophied and the hairs more slender than usual.

All the heads were shingled, and corrosive sublimate was applied to each daily. Thirty girls were divided into five classes, and treated with as many different preparations, namely; in addition to the regular washing with corrosive sublimate solution, six had the spots dabbed with corrosive sublimate, two grains to the ounce; six were painted frequently with tincture of cantharides; six had thorough inunctions with sulphur ointment; six with cantharidal ointment; six with turpentine.

About the middle of July a general stand-still, and soon after a general improvement, was noticed, and this has gone on gradually, until at present no signs of the disease can be seen except by careful observation, when it is noticed that there are a few bare spots on the heads, and also that the hair grows sparsely over the affected spots, while some of the bald patches are entirely covered in.

The treatment seemed to have no particular effect. The cases in each class appeared to improve at about the same rate as in all the other classes.

DR. J. T. BOWEN, of Boston, had examined the whole sixty-three children on two occasions, and was positive that ring-worm was not to be considered. It seemed to him impossible clinically to separate these cases from the ordinary alopecia areata. The only point of difference he could detect was that there were more of these very small spots. He had no hesitation in including this epidemic in the class of cases described by the French writers as alopecia areata in schools, camps, etc. So far as he knew, such epidemics had not been described in America.

DR. J. C. WHITE of Boston, had seen several of the cases. So far as surface appearances went, he thought they did not differ from ordinary cases of alopecia areata; but to his mind the spots were more irregular, more angular than ordinarily seen in alopecia areata. The spots were far more numerous than ordinarily, and the development of the disease was far more rapid than he had ever seen in cases of alopecia areata. If we studied the pathology of the disease and the history of these so-called epidemic instances, it seemed to him that we might be dealing with a disease which was not alike in all cases. He did not see how it was possible to explain these cases, and cases like these without the acceptance of the theory that it was a germ disease. He was not prepared to say he considered this a case of typical alopecia areata becoming epidemic or showing itself to be contagious, but we might very well be dealing with one of those rare instances of germ disease characterized by the ordinary surface appearance of alopecia areata, but by a difference in the gross appearances of the disease; and therefore he thought this would show that there was more than one disease characterized by alopecia

in areas, and he considered this as a probable example of that much rarer affection, and different from ordinary alopecia in such respects.

SECOND DAY.—MORNING SESSION.

DR. A. JACOBI, of New York, showed

SPECIMENS FROM A CASE OF HYDORRHACHIS AND HYDROCEPHALUS.

DR. HENRY KOPLIK, New York, read a paper entitled,

FORMS OF DIPHTHERIA WHICH SIMULATE SIMPLE ANGINA.

He said: Since the specificity of the Klebs-Loeffler bacillus has become more an accepted fact by all clinicians, the clinical study of diphtheria has presented many new and hitherto unexpected difficulties. A careful study of the question does not seem to substantiate the supposition at first entertained that the specific nature and virulence of this peculiar micro-organism once established, the clinical aspects of diphtheria would become much simplified. We are now recognizing the condition, diphtheria a membrane, and diphtheria the disease. The presence of a membrane does not by any means complete the diagnosis of a case of throat disease. In a series of studies upon diphtheria of the tonsils, pharynx, and larynx begun in the early part of this year, and conducted in the Carnegie Laboratory, he was impressed by certain facts from a clinical standpoint. Among other things, he directed his attention to an immense number of cases which are of daily occurrence, the so-called doubtful cases. His studies include an analysis of thirty-four such cases. In many of these cases physicians differed in opinion. These cases included, first, those in which a careful inspection of the throat revealed no membrane or even specks of membrane. Again, other cases presented a mere speck of membrane upon one tonsil, which could not be distinguished in appearance from a follicular crypt or lacuna. In other cases there was the typical appearance of follicular tonsillitis in one tonsil. In all of the cases, the membrane, exudate, or secretions were removed from the tonsil, soft palate, or posterior pharyngeal wall by means of a very small, thin, sterilized scoop, such as is used in ear work. This was then passed over the surface of one or more tubes of Loeffler blood-serum and bouillon mixture. Pure culture of the Loeffler bacillus were obtained, first by the dilution methods of Loeffler, and then upon agar plates. The pure culture was studied in the regular way upon various substances, — agar, glycerine-agar, bouillon, gelatine and potato. The first series of cases begin suddenly with symptoms of laryngeal involvement. The patients may have suffered a few days or a week from an amygdallitis which has been diagnosed and treated as benign. Suddenly new symptoms appear in the form of stridulous cough and breathing and temperature, completing a picture of laryngeal disease. In some cases, even when the laryngeal complications appear, a careful daily examination of the throat fails to reveal any membrane, and even in the whole course of the case no visible membrane appears, and the patient recovers. In this absence of membrane and recovery lies the danger of the disease, and its power to harm others by disarming suspicion and rather concealing the true diphtheritic nature of the affection. Again, another series of cases are those which we may treat for days as simple amygdallitis,

daily inspection failing to show any membrane. Suddenly a croupy cough appears, also stridulous breathing, then upon looking into the mouth one or two very small specks of membrane just forming on the tonsils are seen. Death may follow with laryngeal stenosis within twenty-four hours. The most puzzling cases are those afflictions of the tonsils in which, with the ordinary symptoms of swelling of the tonsils, with or without glandular enlargement at the angle of the jaw, we have, as a sole manifestation of diphtheria, a single small speck of varying color on one or the other tonsil. But specks upon the tonsil are deceptive, and the means of diagnosing them with certainty are found only in the bacteriological method. Some pathologists believe that diphtheria can exist without any membrane.

A paper by J. LEWIS SMITH, M.D., New York, was read by title.

F. HUBER, M.D., of New York, read a paper on

TWO TRACHEAL AND BRONCHIAL CASTS,

and showed specimens.

ETIE L., eight years old; diagnosis, pseudo-membranous croup (diphtheria). With the exception of an occasional mild suffocative attack, the prognosis was satisfactory during the first few days. A few days afterwards, following a severe spell of coughing attended with asphyxia, quite a large piece of membrane was coughed up. The voice now became clear and the dyspnoea was relieved for some hours. A return of hoarseness and stridulous breathing showed that the membrane was being deposited anew. The next morning another and larger piece of membrane was expelled. Later in the day the condition became worse. Intubation was practised. Suddenly severe dyspnoea and other symptoms set in, and the following morning tracheotomy was performed. Almost immediately a larger cast was expelled, followed by a little blood and mucus. Symptoms for a few hours cleared up, but within twenty-four hours patient died.

DR. AUGUSTUS CAILLE, New York, recalled a case in an older girl, where tracheotomy was done, followed by the expulsion of a very thick membrane. He thought the casts from Dr. Huber's case very well preserved.

DR. FISHER, New York, while in Berlin last year, saw and made many experiments with the bacillus of diphtheria. He referred to the difficulty of getting at the throats of young children in order to get a piece of the membrane for bacteriological examination, but considered the bacteriological examination itself a comparatively easy task. He does it at the bedside.

DR. A. JACOBI, New York, spoke of the difficulty and impossibility of making positive diagnosis in every case, and valued the interesting information given. The bacteriologists, as well as the clinicians, however, have much yet to learn.

(To be continued.)

THE DUFFERIN FUND.—The National Association for supplying Female Medical Aid to the Women of India is now on a sure footing. During 1891 over 466,000 patients were treated. There are forty-eight hospitals controlled more or less completely by this society.

T. C. ALLBUTT, M.D., F. R. S., has been appointed Regius Professor of Physic in the University of Cambridge (Eng.).

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

REGULAR Meeting, Monday, February 1, 1892, DR. C. F. FOLSOM, Chairman.

DR. E. S. WOOD read a paper entitled,

RENAL ALBUMINURIA NOT DUE TO ORGANIC DISEASE OF THE KIDNEYS.¹

DR. F. C. SHATTUCK: This is a timely and interesting paper, which illustrates the great advance that has been made in our clinical knowledge of renal disease in the past twenty years. As a student, I was taught that albumen and casts in the urine were of fatal import. The more conscientiously we make routine examinations of the urine of every patient who comes to us, the more are we impressed by the slight significance of albumen and casts in many cases. My own attention has been called, within the past few years, to the frequency with which they are found in the urines of those who are past fifty years of age, and who are presumably in, or approaching, the degenerative period of life. I am now engaged in collecting a large number of these cases for analysis with reference to this point, and am not yet prepared to speak finally with regard to it. But experience has led me to expect to find small traces of albumen and hyaline and granular casts, perhaps pretty abundant, in such urines, whether direct or indirect renal symptoms are absent or not. As probable instances of concentrated urine as productive of albumen and casts, I recall two brothers, prominent business men in one of the larger towns of the State, who were solicited to take out life insurance policies to the amount of \$100,000. The examiner found albumen and casts, and the offer of insurance was promptly withdrawn. I have seen them both a number of times during the past year, and have been unable to detect any other evidence of disease about either of them. They would, indeed, appear to have an enviable expectation of life. We constantly see well-to-do persons, who can and will take reasonable care of themselves, live for years happy and useful lives, although their hearts or arteries or both are clearly not in their pristine integrity. The same thing obtains with the kidneys, and it is of the utmost importance for our patients that we realize this fact.

DR. R. H. FITZ: I think it is desirable for Dr. Wood to bring up this subject, particularly from the practical side, so that we shall not be too ready to consider that our patients have any serious disease of the kidney because they have albuminuria and casts. I have been impressed by the frequency with which the record of the sediment of his cases shows the presence of something more than casts, particularly the association of blood with the casts, pointing, it seems to me, distinctly toward a local pathological process in the kidney. We ought to bear particularly in mind the importance of not calling every pathological condition in the kidney Bright's disease where albuminuria and casts are present. This term has led to a great deal of fear on the part of the community. It seems to me highly probable that many of the cases which Dr. Wood has reported are distinctly associated with lesions of the kidney, lesions which are temporary, but destructive, and which will leave alterations in the kidney not sufficient to produce any permanent disturbance of

function, but to be found afterwards as evidence of a pre-existing pathological process. I am particularly impressed with this from the anatomical side. It is very common to see scars upon the surface of the kidney and thickenings and destruction of the Malpighian bodies on microscopic examination. Dr. Shattuck says after the age of fifty he expects to find albumen and casts. After the age of fifty I expect to find a kidney showing evidence of what may be called focal destructive changes, and I have in mind an illustration. It was that of a gentleman who recovered from an acute and severe attack of pyelo-nephritis, lived several years, and finally died uremic. Numerous renal scars were found, and a considerable amount of kidney had been destroyed. It seems to me, with regard to several of these cases which Dr. Wood has presented, that, in connection with albuminuria and casts, there was very likely, at the time of the occurrence, a local pathological process in the kidney. It was evidently not a Bright's disease. It was perhaps an inflammatory disturbance or a necrosis or a degenerative destructive condition, and the patients recovered. In fact, they could hardly be said to have recovered, for, at the time of the occurrence, there were no symptoms of renal disease other than an abnormal urine; at the same time it is not unlikely that there was actual disease of the kidney, very limited and manifested by such signs as Dr. Wood has described, although there were no symptoms of sufficient gravity to lead either the patient or his friends or physician to consider that he was diseased.

DR. A. T. CABOT: I was very much interested in the paper, since it constantly comes in my way to see cases in which albumen and a few casts, generally hyaline and from the straight tubules, are found, not associated with serious renal disease, and continue to appear intermittently for years, perhaps, without ill consequences. Some years ago I saw, with Dr. Edes, an interesting case of albuminuria in a child. This girl had albumen and casts in the urine, and, owing to some slight frequency and occasional difficulty in urination, Dr. Edes called me to see her in consultation. Under ether we found a narrowing of the urethra at the internal meatus, which yielded readily to large French bougies. The result of dilatation was the entire disappearance of the albumen and casts, and relief to the renal symptoms. I see that same thing constantly in older people; but that was the first case in which I had observed it in a child. The condition of tightness at the neck of the bladder I have seen several times in small boys associated with symptoms that led to examination for stone in the bladder. Apparently the tightness is behind the constrictor muscle at the real neck of the bladder, and the symptoms have in my experience been relieved by the dilatation. I think in those cases probably, judging from this child's case, the urine would show some albumen owing to the obstruction.

DR. WOOD: The case which Dr. Cabot mentions is interesting, and recalls one reported by Dr. Farlow of obstructive suppression of urine due to a morbid growth compressing both ureters. There was a decided trace of albumen in the urine, and casts.

In connection with Dr. Fitz's remarks, I have often wondered how much organic change may be produced in a kidney by a long continued renal irritation. It has always seemed to me that it is very desirable to detect by the examination this renal irritation early, and to

¹ See page 459 of the Journal.

remove the cause when possible so to do, whether it was simply concentrated urine or separation of abnormal sediment within the tubules.

Dr. A. T. CABOT showed a specimen of

PAPILLOMA REMOVED FROM THE BLADDER,

and gave the following history:

S. C. W., a strong man of fifty-five, who had always been well, began to notice the appearance of blood in the urine one year ago. The attacks of haematuria became gradually more and more severe, though with some long intermissions. The final attack began about five weeks before he was seen, and had gradually increased in severity until, at the time when Dr. Cabot saw him, his bladder was partly filled with clots, and the urine contained almost pure blood. There had been examinations of the water made at some considerable time before, but no villi or other evidence of new growth had been discovered. The prostate was not enlarged or tender, and examination with the sound revealed nothing in the way of a calculus in the bladder.

An exploratory incision in the perineum was made, the membranous urethra was opened, and the finger introduced through the prostate into the bladder. It at once encountered a large pedunculated growth springing from the trigonum, about the size of a small hen's-egg. This was so friable that it easily broke off before the finger, and presently was loose in the bladder. It was then removed piecemeal through the perineal opening. The base from which the tumor had been detached was not hard, nor indurated, and was thoroughly curetted with a sharp spoon, and a drainage-tube was then introduced. The hemorrhage was not severe after the operation, and entirely ceased after the second day. The urine came mostly through the perineal opening, and this persisting, on the tenth day a catheter was introduced through the penis for the purpose of diverting the urine, and giving the perineal opening an opportunity to close.

Dr. WHITNEY gives the following report upon what was removed: "The tumor of the bladder consists of several quite friable papillomatous-looking masses, the bulk of all of which would equal that of a small egg. Sections through these showed under the microscope narrow, fibrous, vascular stalks covered with many layers of large, irregularly-shaped epithelial cells. It could not be determined whether the growth had grown into the deeper layers of the bladder, as there was no place that could really be fixed upon as the base."

The diagnosis was papilloma, as far as could be made out. The feeling of the base, as above described, would certainly lead to no suspicion of malignancy, and Dr. Cabot reported the case as one of simple papilloma.

Dr. WOOD: I should like to ask if he had bladder symptoms besides hemorrhage.

Dr. CABOT: He had no symptoms but the haematuria, which did not annoy him much, and that had only been considerable for five weeks when I saw him.

THE new Russian Pharmacopœia has recently been issued. Compared with the preceding, it contains a smaller number of articles, 318 having been discarded, while only 100 new ones have been added. The total number of articles is 808.

Recent Literature.

Handbook of Materia Medica, Pharmacy and Therapeutics. Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Extemporaneous Pharmacy and Minute Directions for Prescription-Writing. By SAMUEL O. L. POTTER, M.A., M.D., Professor of Theory and Practice of Medicine in the Cooper Medical College of San Francisco; author of "Quiz Compend," Late Acting Assistant Surgeon, U. S. A. Philadelphia: P. Blakiston, Son & Co.

Into this book the author has succeeded in putting a surprising amount of information in a very accessible form.

Under *Materia Medica* and *Therapeutics*, which occupies about one-half of the work, the drugs are arranged in alphabetical order. This allows the reader to find readily any desired title; and in this he is facilitated by the use of large type for the headings. Under each remedy there is succinctly given an outline of its sources, its properties, its preparations and a few lines descriptive of other compounds of a similar nature. The physiological action is then considered, and finally the uses. These are all treated without elaboration; but, so far as one may judge from examples taken at random, in a suggestive manner, useful to practitioners and students who have gained a more detailed knowledge from fuller works on therapeutics, and who need to refresh their memories by such an outline as is here given.

Under "Sulphate of Magnesia," the statement that its "purgative action is chiefly due to increase of the intestinal fluids by an outward osmosis from the vessels and not from increase of the secretions of the glandular appendages," is open to question in the light of Matthew Hay's investigation.

The author takes the ground that no really scientific classification of medicinal agents is possible, and he only attempts to group the medicines after each one has been studied singly. Among these groups are a few not usually found in works on therapeutics, which will commend themselves to some practitioners, such as alkalinizers of the urine and acidifiers of the urine.

Part II, on "Pharmacy and Prescription-Writing" is an excellent outline of these subjects, and adapted to the needs of students. The use of triturations, a kind of preparation used a century or more ago, is recommended.

Part III includes special therapeutics, and is an attempt to suggest the treatment in various diseases. The synopsis of treatment is serviceable, though, of course, open to criticism. For example, under cancer, is given the following:

B. Acidi Arseniosi	•	•	•	•	•	3 lb
Muci. Acacia						31

As a paste on a cancerous sore followed after two or three days by bread poultice until slough separates.

No caution about the risk of arsenical poisoning from absorption is given.

The Appendix includes a list of Latin words used in prescriptions, with their contractions and corresponding English equivalents; hypodermic formulae; treatment of poisoning; table of differential diagnosis; the examination of the urine; tables of specific gravity; and other convenient information.

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CHLOROFORM VS. ETHER ONCE AGAIN.

WAR wages still between the advocates of chloroform and ether abroad. The *Dublin Journal of Medical Sciences* for April has begun to publish a review of the Hyderabad Chloroform Commission's report — which appeared in the *Lancet* at least two years ago — and Surgeon-Major Lawrie is severely criticised for attempting to formulate the status of the ether-chloroform question in America. Dr. Lawrie says that ether is preferred by the majority of American surgeons on account of the prevailing opinion that it is safer; in return for this he is fairly scorched by the reviewer, who goes so far as to recall our late civil war and waves the bloody shirts of our Southern brothers. And all this, forsooth, to strike terror into the heart of a surgeon of Her Majesty's Army in India who believes in the chloroform as firmly as does the reviewer himself.

The following quotation explains itself :

"Like many others, Dr. Lawrie confounds the New England States with the United States. In so doing, he reminds us of those politicians who in describing Ireland leave out Ulster. The New England States are not the United States, neither is their opinion the American opinion. The men who raised American surgery to its present high standard were Southerners, men of the cotton States; and when the States's-rights War occurred, the Confederate surgeons exhibited a skill and resourcefulness, and produced better results, than (*sic*) up to that time any military surgeons ever recorded; and this was done amidst the greatest difficulties. The men who have this splendid record to their credit without exception are chloroformists. Two of the most distinguished of these Southern surgeons have expressed their views in no uncertain manner on the chloroform questions, as may be seen by reference to Mr. Foy's book, '*Anesthetics, Ancient and Modern.*'"

"That the Eastern States advocate ether in season and out of season, and that they are intolerant of any

difference of opinion, is notorious; but, nevertheless, the United States refuses to be dominated by a noisy, didactic faction, and with the majority of American surgeons chloroform continues to be the favorite anesthetic."

It is just possible that Dr. Lawrie may be right after all about the majority of American surgeons. It is hoped that the reports of careful investigations of all deaths under anesthesia will soon show where the majority is in this country. At all events we are glad that our Southern medical brethren come in for a share of praise. The warriors of the old world have learned many things from us during the late war, and not least among these things was the improved organization of army medical work in the North as well as the South.

It is a pity that so much unnecessary warmth is exhibited whenever the respective merits of the two anaesthetics are discussed in the medical journals. A little cool discrimination and candid impartiality would be more apt to lead to statistics of some real value, both scientifically and to the world at large.

THE VEGETARIAN'S HEART VS. THE MEAT-EATER'S HEART.

In the *Nineteenth Century* for April, 1892, Lady Paget, writing on the subject of vegetarianism and in its defence, gives the following among several arguments: "While the meat-eater's heart has seventy-two beats in the minute, the vegetarian's has only fifty-eight, therefore 20,000 beats less in the twenty-four hours."

Without waiting for proof of the above statement — which may not be easily obtained — or insisting on the well-known fact that there is great variability in the frequency of the pulse even among meat-eaters, some carnivorous men and women having habitually a pulse below fifty-eight, we might provisionally assume the writer to be correct. What then? A pulse of fifty-eight is not necessarily a strong pulse; does not necessarily imply a vigorous heart. A heart that beats seventy-two times or eighty times a minute may be a stronger and sounder heart than one that beats fifty-eight times, and may retain its vigor much longer.

If Lady Page's vegetable-eater will still farther reduce his heart-beats, by taking a recumbent instead of maintaining a sitting or a standing posture, he will find that his pulse will fall still lower — to fifty, or even forty-eight! To be consistent, then, with the principle suggested by this inductive inquiry, *he should keep his bed all the time*, for by so doing he will spare his heart 480 beats an hour, or 11,520 beats in the twenty-four hours! If he gets up to take exercise he at once increases his heart's beatings by imposing more work on that organ. If he eats a hearty meal, even of vegetables and cereals, he again compels his heart to quicken its pulsations by several more beats per minute during eating and during active digestion. He must also avoid all mental excitement, as this accelerates the pulse, and increases the work of the heart.

The question is, of course, not broached in the foregoing article — though necessary to a scientific inquiry — whether the heart of the meat-eater may not be stronger and better fitted for its tasks by virtue of a diet which is largely animalized. A well-nourished heart will be more competent than one that is ill-nourished to perform its really very important part in furthering the conditions of successful living, but this is a truth that is so trite that we need not dwell upon it longer. The data for an intelligent appreciation of the subject are not lacking, and it is quite possible to determine with much scientific exactness by an appeal to physiological truths and to common experience — national and individual, due allowance being always made for exceptions — what kind of diet is best for nations, for climates, and for individual conditions. Unfortunately for the vegetarian, he is too blinded by bias and prejudice to see aught but a partial and fragmentary side of the question.

THE ALMY MURDER TRIAL.

IMPARTIAL MEDICAL EXPERT TESTIMONY.

The proceedings in connection with the reopening of the Almy murder last week, at Plymouth, N. H., on the motion of the prosecution, offered two interesting medico-legal features. The medical evidence on the part of the State show that, in New Hampshire, there is need, in the conduct of medical examinations in cases of death by violence, of some system like that of which we have the benefit in Massachusetts. The other incident illustrated the feasibility of an innovation, long desired by physicians, by which medical experts may appear in court without being discredited, justly or unjustly, as partisans. One of the experts in this case before he answered any questions, asked and received permission to read the following:

STATE v. FRANK C. ALMY.

By agreement of the parties, it is ordered by the court that Dr. Frank W. Draper, Professor of Legal Medicine in the Medical School of Harvard University, be called to testify as an impartial expert. [Signed] G. Dor. C. J.

The questions that followed were asked by the court and by counsel, thus establishing the independent attitude of the witness and relieving him from all temptation to indulge in partisanship at the expense of candor. The precedent is clearly an important one, and has an obvious value for future use in similar cases.

The result of the trial, in the reaffirmation of the proven guilt of the accused, is thoroughly acceptable to all who are familiar with the evidence in this cowardly and lustful homicide.

THE PASTEUR INSTITUTE, PARIS. — Since the 1st of January, 1886, over 11,000 people have been treated for rabies; and of these only 98 or 0.88% have died.

MEDICAL NOTES

CHOLERA is announced to be spreading in the Punjab. Many fresh cases have appeared since the return of the pilgrims from Hurdwar, where they were disbanded owing to a virulent outbreak of the disease.

LADIES' DRESSES AND CONTAGION.—The medical press in different parts of the world appears to have begun a crusade against the recent fashion of long skirts. This stirrer of dust and carrier of infection is supposed to be especially dangerous as a distributor of a tubercle bacillus.

VIRGINIA MEDICAL LAW.—Our note of April 14th, that the Supreme Court of Virginia have decided that the Medical Law of the State was unconstitutional, was founded on an erroneous communication from Richmond. We have since been informed that the decision in the case referred to did not deny the constitutionality of that law.

MORTALITY OF NEW YORK STATE FOR THE FIRST QUARTER OF 1892.—During the first three months of the present year there were 35,193 deaths in the State. According to the estimate of the State Board of Health, the last epidemic of influenza beginning in December has already caused about 10,000 deaths, or one in each six hundred of the population.

MRS. OSBORNE'S RELEASE.—The Home Secretary has pardoned Mrs. Osborne, who is serving a sentence of nine months' imprisonment in England. Much has appeared in English papers concerning her state of health and her responsibility for her crime. Being pregnant, it was urged that her imprisonment was dangerous both for her and her future child, and this view appears to have been finally taken by the Home Secretary.

TUBERCULIN IN LEPROSY.—The *Lancet*, in a leading article, refers to forty-five cases of leprosy treated by tuberculin in different parts of the world and hitherto published. While some patients have shown improvement that has not been proved to be permanent, and in some was certainly only temporary, the benefit is too uncertain, too limited in character and time, and purchased at too great a risk of aggravation of the disease by the dissemination of new foci, for it to be recommended as a treatment for leprosy.

MEDICAL LEGISLATION IN OHIO.—The late Ohio legislature appears to distinguish itself by its bad medical legislation. A very moderate medical practice bill was before it, but the opposition of itinerant doctors and other medical monstrosities was so great that the bill was defeated "amid roars of laughter." On the other hand, it appropriated \$5,000 to test the efficacy of the Keeley cure. Each member is to have the privilege of sending one patient to be cured (or of going himself). As an offset to this they passed a law that any physician may ride on any freight train at his own risk by paying the full passenger fare.

A LAW TO SUPPRESS TUBERCULOSIS, especially in milk cows, has been signed by the governor of New

York. In general, the law authorizes the health inspectors to examine all the cattle in the State, and, when the disease is found, to cause the animal to be killed. The owner will be reimbursed for the actual value of the cow. The plan of carrying on this inspection has not been decided upon. An appropriation of only \$5,000 has been made for the purpose. The diary statistics of the State show that milk production is the largest industry in the State, and that it is greater than that of the milk production of all the other States put together. There are 11,600,000 milch cows in the State. The farmers sell to New York City \$11,500,000 worth of milk, and to the people of the whole State \$40,000,000 worth.

NEW ENGLAND.

PUBLIC INSTITUTIONS OF BOSTON.—The Mayor has sent to the Board of Aldermen requesting an appropriation to the amount of \$287,000.00 for the purpose of enabling the Department of Public Institutions to dispense with the insane hospital at South Boston.

DIPHTHERIA IN DORCHESTER.—A small epidemic of diphtheria has broken out in Dorchester among the pupils of the Atherton School. The first case occurred on April 14th; a little girl spent a whole day in her class while suffering from unsuspected diphtheria. Ten children who sat in the same room with this patient were subsequently affected.

NEW YORK.

MEMORIAL PAVILION TO DR ABRAM DU BOIS.—The family of the late Dr. Abram Du Bois have announced to the Trustees of the New York Eye and Ear Infirmary their intention of presenting the sum of \$80,000 for the erection of a new pavilion as a memorial of Dr. Du Bois, who for nearly fifty years was attending and consulting surgeon to the Institution, and was always one of its most devoted friends and munificent benefactors. The plans for the new buildings of the Infirmary include three pavilions. One of these has already been erected, and in order to remove the old buildings and put up the other two pavilions about \$70,000 in addition to the Du Bois gift is required.

THE COLLEGE OF PHARMACY.—The sixty-second annual commencement of the College of Pharmacy of the city of New York was held in the Carnegie Music Hall on May 3d. There were 103 graduates, who received their degree from President Samuel W. Fairchild.

INFECTIOUS DISEASES.—Cases of typhus fever are still continuing to develop occasionally in the city, and on the 5th of May no less than three were discovered. Two of the patients were inmates of tenement-houses where typhus fever cases had previously existed. Vessels are now constantly arriving from Brazilian ports on board which there have been cases of yellow fever during the voyage, or

before leaving. Five of the crew of the British steamer *Glengoil*, which reached quarantine on May 3d, died of the disease, and another, believed to be fatally ill with it, was left at the hospital in Rio Janeiro. The steamship *Advance*, which arrived May 4th, had also had yellow fever on board, and the ship's surgeon, Dr. Randle, was sent to the hospital at Para, suffering from the disease. Measles is now more prevalent, it is said, than has been the case for a quarter of a century. During the week ending April 23d there were reported 529 cases, with 23 deaths, and during that ending April 30th, 628 cases, with 25 deaths. Since then the cases have been even more numerous.

Miscellany.

INVESTIGATION OF THE OUTBREAK OF TYPHUS FEVER.

On April 30th the sub-committee of the joint Senate and House Committee on Immigration and Naturalization, examined a number of medical witnesses in regard to the recent outbreak of typhus fever.

Dr. Wm. T. Jenkins testified that the surgeon of the steamship *Massilia* was a capable and careful officer. The Russian Hebrew passengers, he said, were in a starving condition, not owing to the negligence of the steamship company, but because they refused all food other than that prepared by their own rabbi. He expressed the opinion that his own legal responsibility ceased after the passengers of any vessels passed examination at quarantine. He described the method of quarantining four patients who were discovered in the city, and stated that the Health Department of New York had been successful in practically stamping out the typhus outbreak.

Dr. Cyrus Edson, Sanitary Superintendent, was next examined, and in reply to a question from the Chairman of the Committee, Mr. Chandler, as to whether a ship at sea was a likely place for the development of typhus fever, described the conditions which were peculiarly favorable for such development.

Mr. Chandler then paid a graceful compliment to the New York Board of Contagious Diseases, saying, "Dr. Edson, all the senators and members of the House are impressed with the manner in which the disease was handled. I speak for them all, or I should not speak at all."

Dr. H. I. Biggs, one of the pathologists to the Health Department, was examined with a view of ascertaining from him as an expert, the possibilities and probabilities of infection and the mode of development and spread of typhus. His opinion in regard to the *Massilia* outbreak was that the disease had developed in the baggage or that otherwise its spread would have been greater. He, too, expressed the opinion that the conditions on board the vessel afforded ample scope for the development of typhus. He had little faith, he said, in the method of fumigating vessels.

The agent of the Fabre Line, to which the *Massilia* belongs, was requested to notify the Committee immediately on the next arrival of that steamer, in order that the captain and surgeon might be summoned before them for examination.

THE REFORM OF GERMAN ANATOMICAL NOMENCLATURE.¹

PROF. WILHELM KRAUSE, who has resigned his professorship at Göttingen, is coming to Berlin to create a uniform anatomical nomenclature. He has undertaken this task at the instance of the Anatomical Society, which has busied itself for five years past with the question, How is the confusion in anatomical nomenclature to be remedied? This question was thoroughly discussed at the third assembly of that Society in 1889. Professor His of Leipsic showed on that occasion how the present multifrom anatomical nomenclature had arisen, and how it could be simplified. It was determined that, in the creation of a new nomenclature, regard must be paid not only to descriptive, but also to general and comparative anatomy and to embryology, and that the reform must be based on a complete list of the technical expressions of anatomy, in which all the changes of meaning which each expression has undergone are stated. It was further decided that all that is good in the present nomenclature should be retained, and that expressions containing proper names should not be dropped. Professor His uttered a warning against going too far in the Germanization of words derived from the Greek and Latin, on the ground that such a change would render mutual understanding between German and foreign anatomists more difficult. A committee was appointed to arrange for and superintend the work, and it was resolved that the work itself should be entrusted to an anatomist of reputation. The members of the committee elected in 1889 are Kölleker, Oskar Hartwig, His, Koilmann, Merkel, Schwalbe, Toldt, Waldeyer, and Karl Bardeleben; and their number was augmented in following year by the election of Cunningham of Dublin, Leboucq of Ghent, and Romiti of Pisa, in order that due regard may be paid to the necessities of foreign anatomists. The work was entrusted to Professor Wilhelm Krause, who will have to devote several years to it. The expenses will be defrayed by the Anatomical Society and the Universities of Berlin, Vienna, Munich and Leipsic.

MYXEDEMA WITH INSANITY TREATED BY INJECTION WITH EXTRACT OF THYROID GLAND.

DR. ERNEST C. CARTER of the Lancashire County Asylum reports (*British Medical Journal*) one case treated in this way apparently with great benefit. The patient had been an inmate of the asylum for four years. Undoubtedly the amelioration of bodily condition was much more distinct than that of the mental; for while one could not well say that there were any obvious morbid physical conditions after the course of treatment, and certainly none characteristic of myxedema, the patient's intellectual powers remained in a degree impaired. She was still partially demented, with a tendency to emotionalism. The injections were stopped on account of failure in the supply of fresh thyroids, or possibly a further improvement might have taken place; but the long establishment of mental symptoms makes it more than probable the irreparable degenerations have taken place in the cells of the brain cortex. Nevertheless the rapid progress of improve-

ment in the bodily and mental condition of this patient is strongly corroborative testimony to the value of this method of treatment.

Regarding the method of preparing and administering the extract, Dr. Carter says: "At the outset I followed strictly the procedure detailed by Dr. Murray, but, subsequently, with the object of getting the strongest possible dose of the active principle in a bulk not inconveniently large for injection, I modified the steps, and the method ultimately arrived at was as follows: The gland having been cleared of fat and fibrous tissue, a portion, as large as a damson, was cut up, put into a mortar with some glass (for example, a broken test tube), about half a drachm of glycerine and a drop or two of five per cent. of carbolic acid solution, and the whole ground together to a fine paste. The latter was allowed to settle in a test tube for twenty-four hours, leaving a clear, dark-red extract at the top, which was decanted off, and filtered through linen to insure freedom from glass particles. The extract was made fresh every week, strict antiseptic precautions being observed with regard to all utensils, etc., used, which were cleansed by means of boiling or washing with carbolic lotion, and a drachm of it was given every week in divided doses.

It seemed useless to pretend to any accurate dosage, and my efforts were directed, as above described, to procuring the strongest extract that could be conveniently used for injection. The site of the latter was on alternate sides, between the shoulder-blades, and an ordinary hypodermic syringe employed.

CREDÉ.

CARL SIEGMUND FRANZ CREDÉ, whose death was recorded in the *JOURNAL* of March 31st, was born at Berlin in 1819, and received his medical education at Berlin and Heidelberg. In 1843 he was made assistant to Busch, who was then at the head of the obstetric clinic at Berlin. He remained in this position until 1848. In 1850 he became a *Privat-docent*. His work, at this time, was put in a permanent form and published in two volumes under the title of *Klinische Vorträge über Geburtshilfe*.

In 1852 Credé was appointed director of the Berlin School for Midwives and the lying-in department of the Charité; with this he combined a gynecology clinic, which he himself started. Gynecology at that time was little more than a name, and a gynecological clinic was a novelty, not only in Berlin, but in Germany. From this time he began to teach the method of managing the third stage of labor, which is, in German obstetric literature, identified with his name. His method was modified by others, and changes introduced which were not improvements, and which were sometimes erroneously associated with Credé's name; but the directions which he gave at the beginning of his career were those which he taught at the end, and which are now recognized as being sound and safe practice.

In 1853 he began to be associated with Busch, Ritgen and Siebold in the editorship of the *Monatsschrift für Geburtkunde und Frauenkrankheiten*. In this occupation he continued until his last illness. The *Monatsschrift* ceased to appear, the *Archiv für Gynäkologie* taking its place, but Credé remained at

¹ Lancet, Berlin Correspondence.

the head of the new as of the old journal, greatly to the advantage of both, for nearly thirty-nine years.

In 1856 he succeeded Jörg in the chair of midwifery at Leipzig. Soon after his settlement in that town he founded the Obstetrical Society there. He established an out-patient department both for obstetrical and gynecological cases, and thus more fully utilized the material which that large city offered for the instruction of students. He held this post till April 1, 1887, when illness obliged him to resign it. His most conspicuous public service was the introduction of his method of preventing ophthalmia neonatorum. This great and solid discovery became known and practised all over Germany, and, indeed, in every civilized country, although in different places changes in detail have been made. Crede had the great satisfaction of knowing, even as soon as ten years after the introduction of this mode of preventing the disease, that in the asylums and other institutions for the blind a distinct diminution in the number of applicants whose blindness dated from their birth was perceived. He strongly advocated the delivery with forceps of the after-coming head.

Crede devoted his best energies to the teaching of midwifery, which he considered his most important duty. He held that those who, as students, had not paid much attention to gynecology, could repair this omission afterwards; but that no one should go forth into practice insufficiently instructed in midwifery. He wrote a text-book on midwifery for midwives, the clear style of which made it very acceptable, and which has gone through five editions. When gynecology took the surgical direction in which it has of late been advancing, Crede began to undertake the major operations; but, as he found himself growing old, he gave them up.¹

THERAPEUTIC NOTES.

GUAIACOL CARBONATE. — Seifert and Hölscher² have used this preparation in the treatment of tuberculosis, and have obtained better results than with either creosote or guaiacol. Beginning with a dose of one-third grain, the amount was increased as high as ninety grains daily, without disturbance of the digestive or nervous system. Carbonate of guaiacol is an odorless, tasteless, micro-crystalline powder, insoluble in water, slightly soluble in cold alcohol, and easily soluble in hot alcohol. It is a solid crystalline, chemically pure substance. It is separated into guaiacol and carbonic acid in the intestine.

A REFRESHING BEVERAGE. — Bamberger³ suggests the following to quench the thirst of pneumonia patients:

R. Acid phosphorhei	3 ij.	M.
Syrup rubi idem	3 ij.	M.
Sig. To be taken in water.		
R. Potassii bitartratis	3 ss. ij.	
Syrup rubi idem	3 ss. x.	
Aqua	3 xiij.	M.
Sig. Use as a refreshing drink.		

EXOPHTHALMIC GOITRE. — Dressman⁴ reports three cases of exophthalmic goitre, which were very much benefited by tying the inferior thyroid arteries. The goitre diminished in size, the exophthalmia almost en-

¹ British Medical Journal, April 2.

² Berliner klin. Woch., No. 51, 1891.

³ Satellite, May.

⁴ Deutsche med. Woch., February 4th.

tirely disappeared, and the cardiac disturbance was quite, or nearly cured.

THIOPHENIODID. — Spiegler and Hoch⁵ report a new drug which they consider superior in many ways to iodoform in the treatment of wounds. This drug has the formula $C_4H_2I_8S$, forming in tubular crystals, slightly volatile and melting at 40.5°C . In water it is insoluble, but easily dissolved in ether, chloroform and warm alcohol. The odor is an unpleasant aromatic one. To saturate gauze the following is used:

R. Thiophen-di-iodid	50
Alcohol }	55 500
Ether }	
Glycerine	10 M.

Correspondence.

COTTAGE HOMES FOR TRAINING NURSES.

YOKOHAMA, JAPAN, March 25, 1892.

MR. EDITOR: — A recent writer on Japan is reported to have been inspired by the earthquake to express himself in this wise: "It imparted a feeling of pleasure rather than apprehension to realize that the planet itself was also quick and active, full of secret developments and hidden evolutions, shaping itself for fate's destinies with these throes and soft, mysterious upheavals." The earthquake, with its disastrous results, has moved the woman's heart of Madame Sannomiya to do something for the young girls whose homes have been destroyed by these "mysterious upheavals." Some of these children were at the same time bereft of parents and relatives.

The practical outcome has been the preparation, in Tokyo, of a home where the Japanese girls are taught the various duties and industries which experience has shown to be useful and appropriate to their sex. One house, with suitable grounds, has lately been bought, and arranged for fifteen girls, though at present but thirteen are under instruction. The education is to prepare them to act as nurses, in addition to the usual occupations of woman's life; for the natural condition of woman includes marriage, and this is kept in view by those who are thus striving to start a new form of home-economy in the midst of this nascent civilization change. It is not designed to erect large orphan asylums, but rather to establish, in various places, small houses similar to that referred to, which will serve as seed-plants or centres whence the new light and mode of living (single or married) may spread, to be a model for those who are able and willing to be and to do better, physically and in mind and heart.

A great merit of such doings is the purpose that the less informed Japanese may thus learn and be incited to do for themselves, taking a lively and properly selfish interest in progressive improvement.

Other ladies associated as a committee with this enterprise of loving-kindness are Mrs. Caroline Kirkes and Mrs. Mary Shaw.

Very respectfully,

F. B. STEPHENSON.

A SWINDLER.

WATERBURY, CONN., May 5, 1892.

MR. EDITOR: — It may be of use in exposing a swindler and stopping his further operations if you will state in the *Boston Medical and Surgical Journal* that a man giving his name as "Jno. D. Martin," and pretending to be an agent for the "Home Supply Association, 315-321 Wabash Avenue, Chicago, R. S. Peale, General Manager," with a branch office at No. 2 Beacon Street, Boston, has been exploiting towns in Connecticut. He has no credentials.

Yours truly, WALTER H. HOLMES, M.D.

⁵ Medical Press.

METEOROLOGICAL RECORD.

For the week ending April 30, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Baro-meter		Thermometer.		Relative humidity.	Direction of wind.	Velocity of wind.	Weath'r.	Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.					
S.—24	30.16	56	65	47	8.00 A. M.	W.	W.	C.	
M.—25	30.45	41	54	46	47	23	12	C.	
T.—26	30.38	45	54	45	52	55	9	C.	
F.—27	30.36	42	54	42	52	55	12	C.	
T.—28	30.13	46	51	49	71	66	46	N.E.	
F.—29	29.94	32	54	48	66	66	15	S.W.	.01
S.—30	30.26	48	56	40	52	31	42	W.	.15
ESW ⁺	30.24	47	55	38	50	47	49	N.W.	.03

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow. + Indicates trace of rainfall. ⁺ Mean for week.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, APRIL 30, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Inflammation.	Aesth. lung disease.	Scarlet fever.	Diphtheria.	Diarrhoea.	and group.
New York	1,515,301	950	368	17.37	22.55	2.86	2.31	2.72	
Chicago	1,069,850	500	237	12.80	15.84	2.00	1.29	4.80	
Philadelphia	1,046,963	430	139	13.57	14.36	2.07	.92	6.67	
Brooklyn	806,343	320	120	13.00	24.36	2.08	1.56	5.72	
St. Louis	744,771	201	53	8.42	14.07	2.45	1.46	.74	
Boston	448,417	201	53	8.42	14.07	2.45	1.46	.74	
Baltimore	434,439	—	—	—	—	—	—	—	
Cincinnati	296,908	129	40	10.92	15.60	—	3.12	4.68	
Cleveland	262,000	94	34	15.50	15.60	—	1.56	2.40	
St. Paul	246,000	85	39	9.44	23.60	—	2.36	4.72	
Pittsburg	240,000	85	39	12.52	17.44	—	1.69	13.88	
Milwaukee	240,000	92	42	16.35	24.36	—	2.22	—	
Washington	230,362	90	27	11.11	13.33	—	—	—	
Nashville	76,168	32	11	6.26	—	—	—	—	
Portland	65,160	19	8	4.21	14.71	—	—	—	
Portland	64,163	15	8	6.66	—	—	—	—	
Worcester	84,655	36	6	16.66	20.00	—	—	6.66	
Lowell	77,658	47	19	4.36	10.65	—	4.28	—	
Fall River	74,398	32	12	17.55	3.57	—	—	3.57	
Bridgeport	70,028	25	6	8.00	16.00	4.00	4.00	—	
Lynn	57,257	19	5	26.32	15.78	—	—	—	
Lawrence	44,654	23	7	26.10	—	17.40	—	4.35	
Springfield	44,179	25	3	—	—	—	—	—	
New Bedford	40,733	12	6	25.00	16.66	—	—	—	
Woburn	30,801	17	3	—	—	—	—	—	
Chelsea	27,449	9	3	12.22	17.50	—	12.22	—	
Haverhill	27,412	8	0	12.50	12.50	—	6.66	—	
Taunton	25,445	15	1	6.66	6.66	—	—	14.28	
Glocester	24,651	10	1	—	20.00	—	—	—	
Malvern	24,379	5	3	—	40.00	—	—	—	
Fitchburg	22,031	4	1	—	—	—	—	—	
Waltham	18,707	6	0	—	16.66	—	—	—	
Pittsfield	17,281	5	4	—	60.00	—	—	—	
Quincy	16,723	3	1	—	—	—	—	—	
Wellesley	15,929	3	1	—	—	—	—	—	
Newburyport	15,947	4	1	—	25.00	—	—	—	
Medford	11,079	1	0	—	—	—	—	—	
Hyde Park	10,193	6	1	—	—	—	—	—	
Peabody	10,158	1	0	—	—	—	—	—	

Deaths reported 3,292: under five years of age 1,259; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 450, acute lung diseases 617, consumption 427, diphtheria and croup 179, scarlet fever 64, diarrhoeal diseases 58, measles 37, typhoid fever 33, cerebro-spinal meningitis 27, whooping-cough 26, erysipelas 10, malarial fever 8, small-pox 5.

From New York 25, Brooklyn 4, Chicago 3, Philadelphia and Cincinnati 1 each, Milwaukee 1, Fall River 1, typhoid fever Philadelphia 11, Charlestown 9, New York 6, Brooklyn 1, St. Louis, Boston, Cincinnati, Pittsburgh, Nashville and Lawrence 1 each. From cerebro-spinal meningitis Chicago 9, New York 6, Brooklyn and Washington 4 each, Cleveland 3, Nashville 1. From whooping cough New York 10, Fall River and New Bedford 3 each, Chicago and Washington 2 each, Philadelphia,

Brooklyn, Boston, Cincinnati, Pittsburgh and Milwaukee 1 each. From erysipelas Brooklyn 3, New York, Chicago and Philadelphia 2 each, St. Louis 1. From malarial fever New York 4, Charleston 2, Brooklyn and Cleveland 1 each. From small-pox New York 5.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending April 16th, the death-rate was 20.9. Deaths reported 4,080: acute diseases of the respiratory organs (London) 389, measles 177, whooping-cough 175, diphtheria 50, diarrhoea 43, scarlet fever 20, fever 20.

The death-rates ranged from 13.9 in Brighton to 28.3 in Saltford; Birmingham 21.1, Bradford 23.2, Croydon 14.2, Oldham 23.4, Hull 21.3, Leeds 21.5, Liverpool 22.0, Liverpool 28.1, London 19.4, Manchester 27.0, Newcastle-on-Tyne 21.2, Nottingham 19.1, Sheffield 24.7, West Ham 15.1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending April 23d, the death-rate was 21.8. Deaths reported 4,253: acute diseases of the respiratory organs (London) 389, measles 197, whooping-cough 172, diarrhoea 58, diphtheria 46, scarlet fever 44, fever 20.

The death-rates ranged from 13.9 in Brighton to 28.3 in Bolton;

Birmingham 22.8, Gateshead 18.2, Hull 20.6, Leeds 22.4, Leicester 21.4, Liverpool 23.6, London 21.9, Manchester 25.8, New-

castle-on-Tyne 25.5, Sheffield 25.6, Sunderland 23.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 1, 1892, TO MAY 6, 1892.

Leave of absence until July 10, 1892, is granted LIEUT.-COL. WILLIAM D. WOLVERTON, assistant medical purveyor, U. S. A.

CAPTAIN AARON H. APPEL, assistant surgeon, is relieved from duty at Fort D. A. Russell, Wyoming, and will report in person for duty to the commanding officer, Fort Buford, N. D., relieving CAPTAIN JULIAN M. CARELL, assistant surgeon, who will then report in person for duty to the commanding officer, Fort D. A. Russell, Wyoming.

CAPTAIN ROBERT R. BALL, assistant surgeon, U. S. A., is relieved from further duty at Fort Spokane, Washington, and will report in person to the commanding officer, Fort Townsend, Washington, for duty at that station.

CAPTAIN LOUIS W. CHAMPTON, assistant surgeon, U. S. A., is relieved from further duty at Fort Townsend, Washington, and will report in person to the commanding officer, Fort Spokane, Washington, for duty at that station.

FIRST-LIEUT. ALFRED E. BARDLEY, assistant surgeon, U. S. A., will, upon the activation of acting assistant surgeon, GEORGE D. DESHON, U. S. A., at Columbus Barracks, Ohio, return to his proper station (Omaha, Nebraska).

The leave of absence granted CAPTAIN GEORGE McCREEVY, assistant surgeon, U. S. A., for seven days, is extended fifteen days.

FIRST-LIEUT. HENRY D. SNYDER, assistant surgeon, U. S. A., granted leave of absence for one month and fifteen days, to take effect, when his services can be spared by his post commander.

AMERICAN SURGICAL ASSOCIATION.

PRELIMINARY PROGRAMME.

The Association will meet in Boston, Mass., Tuesday morning, May 31, June 1 and 2, 1892, in the hall of the Natural History Society on Berkeley Street.

1. "The Treatment of Uncomplicated Fractures of the Lower End of the Humerus and of the Base of the Radius," by JOHN B. ROBERTS, M.D., Philadelphia, Pa. Discussion by DR. JOHN E. OWENS, of Boston, and DR. W. B. DODD, of Philadelphia, C. B. 2. "Fibroid Tumors of the Uterus," by JOHN HOMANS, M.D., Boston, Mass. Discussion by DR. F. E. LANGE, of New York, M. H. RICHARDSON, of Boston, A. M. VANDER VEER, of Albany, J. EWING MEARS, of Philadelphia, and GEORGE R. FOWLER, of Brooklyn.

3. "Surgical Operations in Persons Suffering from Diseases not connected with that necessitating the Operation, such as Chronic Malarial Poisoning, Diabetes, Organic Heart Disease, etc." by W. T. BRIGGS, M.D., Nashville, Tenn. Discussion by DR. T. F. PREWITT, of Cincinnati; HUNTER McGUIRE, of Richmond, and W. W. DAWSON, of Cincinnati.

4. "Surgery of the Tongue," by N. P. DANBRIDGE, M.D., of Cincinnati, Ohio. Discussion by DR. D. W. CHEEVER, of Boston, DR. D. W. YANDELL, of Louisville, and L. MCLEANE TIFFANY, of Baltimore.

5. "Conditions demanding Excision of the Globe of the Eye," by W. H. CARMALT, M.D., New Haven, Conn. Discussion by DR. W. M. THOMPSON, Philadelphia, Pa.

6. "Ancient Contractures of the Hip and Knee Joints," by

T. F. Prentiss, M.D., St. Louis, Missouri. Discussion by Drs. DeForest Willard, of Philadelphia, and Robert Abbe, of New York.

7. "Report of Operations upon Spina Biifida and Encephalocele, with remarks," by A. T. Cabot, M.D., Boston, Mass.

The Association will meet on Wednesday morning, in the Amphitheatre of the Massachusetts General Hospital, and on Thursday morning in the Amphitheatre of the Boston City Hospital.

PHINEAS S. CONNER, President.

J. R. WEIST, Secretary.

ANNUAL MEETING OF THE BOSTON MEDICAL ASSOCIATION.

The annual meeting of the Boston Medical Association will be held at 19 Boylston Place, Friday, May 30th, at 4 o'clock. This Association has adopted and maintained the fee table which is the standard used in the City of Boston. Membership in the Association may be had by the payment to the secretary of a nominal fee of one dollar and the signing of the Constitution of the Association.

The special business before this annual meeting is the election of a member to the executive committee to fill the vacancy made by the death of Dr. Buckminster Brown.

CHARLES L. SCUDDE, M.D., Secretary, 94 Charles Street.

CENSORS' EXAMINATION.

The Censors of the Suffolk District Medical Society, officiating for the Society of Boston, will meet for examination of candidates for admission to the Massachusetts Medical Society, at 19 Boylston Place, on Thursday, June 2, 1892, at 2:30 P.M.

Candidates should make personal application to the Secretary, and present their medical diploma, or its equivalent, at least three days before the examination.

For further particulars, apply from 2 to 3 P.M., to
JAMES J. MINOT, M.D.,
188 Marlborough Street.

MASSACHUSETTS VOLUNTEER MILITIA.—BOARD OF MEDICAL OFFICERS.

There appeared before the Board this day (May 5, 1892) LIEUTENANT JOHN F. HARRY, of Boston, who was examined and qualified as Assistant Surgeon, Battery A, Light Artillery, Second Brigade.

APPOINTMENTS.

W. T. COUNCILMAN, M.D., Associate in Pathology in the Johns Hopkins Hospital, Baltimore, has been appointed Shattock Professor of Pathological Anatomy in the Harvard Medical School.

The Governor has reappointed DR. ELIJAH U. JONES, of Taunton, to be a member of the Massachusetts State Board of Health.

At a meeting of the Trustees of the Free Hospital for Women, held April 13th, DR. JOHN HOMANS was unanimously elected consulting surgeon to fill the vacancy caused by the death of DR. D. Humphreys Storer.

RESIGNATION.

DR. F. L. KNIGHT has resigned the Clinical Professorship of Laryngology in the Harvard Medical School and the position of Physician for Diseases of the Throat in the Massachusetts General Hospital.

RECENT DEATHS.

JOHN B. VAN BIBBER, M.D., died in Baltimore, May 5th, aged forty-two years. He was a member of the American Neurological Association and of the Medical and Chirurgical Faculty of Maryland.

HARVEY G. MCINTIRE, M.D., died in Concord, N.H., May 9th. He graduated from the Harvard Medical School in 1848, and has lived in Concord since 1863.

RUTSON MAURY, M.D., died in New York City, May 5th, aged twenty-seven years. He graduated from the Bellevue Hospital Medical College in 1887.

W. S. HOPKINS, M.D., of Vergennes, Vt., died May 8th, aged sixty-five years. He had been in active practice for more than forty years, and had served as mayor of the city and in the State legislature.

JOHN GEORGE MOORE, M.D., died in New York, April 30th, aged twenty-nine years. He graduated with honor from the

College of Physicians and Surgeons in 1888, and was subsequently house-physician at St. Vincent's Hospital.

CHARLES F. STILLMAN, M.D., formerly of New York, but lately of Chicago, died of tuberculosis in Plainfield, N.J., on April 30th. While still a young man he showed marked ability in his profession, and he early attained unusual success, especially in the department of orthopedic surgery. At the time of his death he was not yet forty.

GEORGE BROWN, M.D., M.M.S.S., of Barre, died in New York, May 6th, aged sixty-eight years. He graduated from the College of Physicians and Surgeons in New York in 1850, since which year he has lived in Barre. In 1851 he became proprietor of the Institution for Feeble-Minded Youth, which he conducted until his death. He was for several years a councilor of the Massachusetts Medical Society, and in 1889, president of the Worcester District Society.

WILLIAM B. FRIEKE, M.D., M.M.S.S., died in Cambridge, May 9th, aged thirty years. He graduated from Harvard College in the class of 1882 and from the Medical School in 1887.

BOOKS AND PAMPHLETS RECEIVED.

The Anthropometric Tables of Amherst College. 1892.
Athetosis with Clinical Cases. By Archibald Church, M.D. The Insane and the Asylums. By Horace G. Wetherill, M.D. Drug Habituuation. By Lucius W. Baker, M.D. Reprint. 1892.

Gastrectomy. By N. Senn, M.D., Ph.D., Chicago. Reprint. 1892.

The Caustic Treatment of Cancer. By Daniel Lewis, M.D. Reprint. 1892.

Mme. Lachapelle, Midwife. By Hunter Robb, M.D., Baltimore. M.D. Reprint. 1891.

Systemic Infection from Gonorrhoea. By Bedford Brown, M.D., of Alexandria, Va. Reprint. 1892.

Thirty-Two Unselected Abdominal Sections. By Thomas Opie, M.D., Baltimore, Md. Reprint. 1891.

Notes on Beauty, Vigor and Development. The Science of Health Library. New York. Fowler & Wells Co.

A Contribution to Spinal-Cord Surgery. By Archibald Church, M.D., and D. W. Eisendrath, M.D. Reprint. 1892.

Nervo-Vascular Disturbances in Unacclimated Persons in Colorado. By J. T. Eskridge, M.D., Denver, Col. Reprint. 1892.

Ideals of Medical Education. The Address in Medicine, Yale University, 1891. By John S. Billings, M.D., LL.D. Reprint. 1891.

Axata. Clinical Lecture delivered at the Arapahoe County Hospital, Denver, Col. By J. T. Eskridge, M.D. Reprint. 1892.

Notes on Typhoid, from 676 Cases Admitted to the Boston City Hospital in 1890 and 1891. By A. L. Mason, M.D. Reprint. 1892.

Multiple Cerebro-Spinal Syphilis. What can we Expect from the Surgical Treatment of Epilepsy? By B. Sachs, M.D. Reprints. 1891-2.

Old and New Ideas with Regard to the Work and the Organization of Institutions for the Insane. By Richard Dewey, M.D. Reprint. 1892.

The Second Year's Work in Diseases of the Rectum at the New York Post-Graduate Hospital. By Charles B. Kelsey, M.D. Reprint. 1892.

An Appeal to the Medical Profession from the Decision of the Trustees of Co'ombus Medical College. By N. R. Coleman, M.D., Columbus, O. Reprint. 1892.

Idiology of Medical Science. The Evil Events of the Profession, and an Available Device for its Reformation. By Maurice C. Burstein, A.M., M.D., New York.

Two Cases of Hernia, both Treated by Laparotomy: I. A Propertitoneal Hernia; II. A Femoral Littré's Hernia. By W. W. Keen, M.D., Philadelphia. Reprint. 1892.

The Life-History of Tennessee C. Cladlin (now Lady Cook), from her Childhood to the Present Time: Her Experiences and her Work as a Banker, an Editor and a Physician, London, England. 1892.

The Philadelphia County Medical Society in 1848 and 1892. The Annual Address of the President. The After-Treatment in Operative Surgery. By John B. Roberts, M.D., Philadelphia. Reprint. 1892.

Pye's Surgical Handicraft, a Manual of Surgical Manipulations, Minor Surgery, and other matters connected with the work of house-surgeons and surgical dressings. First American from third London edition, revised and edited by T. H. R. Crowle, F.R.C.S. New York: E. B. Treat. 1892.

Lecture.**NEW OUTLOOKS IN THE PROPHYLAXIS AND TREATMENT OF TUBERCULOSIS.**

THE MIDDLETON-GOLDSMITH LECTURE FOR 1892.

BY FRANCIS P. KINNICUTT, M.D.,
Physician to St. Luke's Hospital and the Presbyterian Hospital,
New York.

GENTLEMEN:—When your committee did me the honor to request my acceptance of the Middleton-Goldsmith lectureship of the present year, and suggested the subject, "The Present Aspect of the Treatment of Tuberculous Disease and especially of Pulmonary Tuberculosis," my first inclination was to decline. Their representations that a review of this subject was particularly desirable at the present time and would serve a practical purpose, have alone induced me to undertake a difficult task.

The lecture has been postponed beyond the customary time of its delivery, in the hope that investigations which have been carried on during the past winter in St. Luke's Hospital and in the Pathological Laboratory of the College of Physicians and Surgeons, might be sufficiently advanced to be incorporated in it. This hope, in part, has been fulfilled.

Any consideration of methods of treatment of infectious diseases, at the present time, must necessarily be in the light of modern pathology and bacteriology. Through the discoveries in this field of medicine, the term *treatment* has acquired a new significance. A large number of the infectious diseases of human beings and of animals have already been shown to have their origin in specific pathogenic living organisms; and there are strong reasons for believing that a similar etiology will be demonstrated in the near future for all diseases hitherto included in this category.

In the infancy of bacteriology, it was not unnatural to assume that the sowing of the seed was alone necessary for the production of a disease, that if once the specific germ gained access to the economy, its particular effects would certainly follow. The "possession of a self-protecting power by the organism of man and of the higher animals, which could exercise its influence within certain limits either in arresting the development of the living excitors of disease or in counteracting their poisonous products" was hardly dreamed of. To-day the splendid discoveries of bacteriological research have abundantly demonstrated that an unceasing contest is being waged between the growing power and toxic activity of the pathogenic microphage and the living organism.

In this connection, what can be of more absorbing interest than the discovery by the distinguished plant physiologist Professor Pfeffer,¹ of the group of phenomena, to which he gave the name of chemotaxis, the definite relation between vital movement and chemical action. Later, it was suggested by Dr. Leber, that the emigration of leucocytes in the human body was due to the same power. In other words, that certain harmful substances in the living tissues, embracing effete materials, living pathogenic organisms and viruses of various kinds are agreeable to a rudimentary sense of taste, as it were, in the leucocytes, which are thus allured from the media in which they commonly live, towards the attracting substance.

The mustering of the leucocytes in troops in the neighborhood of the bacterial invaders of the body, as

a direct or indirect protection to it, is almost as dramatic as it is important. This action of the leucocytes, in virtue of their chemotaxis, and the final incorporation or digestion by them of the bacteria, constitutes Metchnikoff's well-known theory of phagocytosis and phagocytic immunity.

Further, we may refer to the investigations of Büchner² and Roemer, showing the association of a general leucocytosis with febrile inflammatory processes. They found that within eight hours after the intravenous injection, in rabbits, of various proteids, the result was marked leucocytosis; the relation of white to red blood-cells on the evening of the fourth day of the daily injection of solutions of the protein of the bacillus pyocyaneus (green pus) was 1 to 38, the absolute number of the red blood-cells remaining unchanged. It should be mentioned that the office of policeman, on the part of the leucocyte is not considered proven at the present time, by many. Their work as scavengers is acknowledged, but it is believed that the true guardianship of the body resides in the body fluids; in other words, that the destruction of bacteria is accomplished by the germicidal power of the latter, and their removal only is affected by the leucocytes.

Finally, we may refer to the investigations which have shown that "while the living tissues and fluids of the body possess the power in varying degree, of arresting the development of living, disease-producing organisms, and of eventually destroying them, certain life products of the latter are capable of impairing or inhibiting this protective power."

In view of such facts, preventive medicine must necessarily embrace the means of promoting the victory of the organism in its contest, either by strengthening its defences or by weakening or destroying the power of the growing microphage.

With our present knowledge of the various media in which the specific living excitors of disease most commonly lurk, it should be a matter of reproach if we fail in securing a more efficient prophylaxis than has been possible in the past.

Previous to 1882, the pulmonary lesions of tuberculosis had been accurately described; and Villemin, as a result of his successful inoculations of animals, had declared it to be a specific infectious disease. With the announcement of Koch, on March 14th of the above year, that he had discovered not only the constant accompaniment but the cause of the tuberculous process, the infectious nature of tuberculosis was finally established and the nature of the relation between specificity of cause and specificity of process in this disease was determined.

Before proceeding further, it will be advantageous to have accurately pictured in our minds the pulmonary lesions which are directly or indirectly due to the tubercle bacillus. The list is indeed a formidable one. Miliary tubercles both single and conglomerate, larger and smaller areas of epithelioid-cell growth called diffuse tuberculous tissue, and various aggregations of these, often in a state of more or less advanced coagulation necrosis, disintegration and excavation as a result of the latter, cicatrical formation, peribronchitis and extensive inflammatory consolidations specific in nature; and finally we must bear in mind the bronchitis and lobular pneumonias probably simple (unspecific) in character, so frequently present in tuberculous lungs.

In the light shed by modern research upon the possession by the organism of man of a self-protecting power against pathogenic organisms, with a knowledge of the specific organism which causes tuberculosis and the lesions which are directly or indirectly produced by its presence in the economy, we are proportionately equipped to attempt to consider the measures, prophylactic and remedial, which have been proposed to cope with the disease.

Prophylactic measures must necessarily consist of those designed to destroy the vitality of the bacillus outside of the human body, to minimize the sources of infection and to render the tissues insusceptible to its presence.

Three possibilities suggest themselves as *specific* means for exercising a *remedial* effect. They are: (1) the discovery of a method of treatment capable of destroying the bacillus within the body; (2) of some substance, organic or inorganic, which by its introduction into the body, may so modify the action of the bacillus, as to deprive it of its harmful effects—the possible abstraction of a constituent of its protoplasm or of its metabolic products, analogous to the tetanus or pneumonic antitoxin, suggests itself in this connection; (3) the discovery of a principle capable on introduction into the economy of increasing the germicidal power of the fluids of the body by stimulating cell activity upon which it ultimately depends, or by such stimulation inducing connective tissue changes in tuberculous tissue, or both.

PROPHYLAXIS.

I shall first consider the prophylaxis of tuberculosis, so far as it relates to destroying the vitality of the bacillus outside of the human body and to minimizing the sources of infection.

With the discovery of the specifically infectious nature of a disease, the means of infection are not necessarily directly evident. In tuberculosis, a series of brilliant investigations quickly threw much light upon this point. Following Koch's discovery, it was very early shown that the bacilli were not contained in the air expired by patients suffering from pulmonary tuberculosis; on the other hand, that their sputum contained bacilli in enormous numbers. It was further shown that the bacilli were incapable of escaping from fluid media, and finally, that the sputum in the dry state, conveyed in the form of pulverized atoms by currents of air, was the most common source of infection. Successive investigations demonstrated that the stools of human beings afflicted with the intestinal form of the disease, the discharges from tuberculous ulcers, glands and bones were positive, if infrequent vehicles of infection; and, finally, that the milk of tuberculous cows, with or without disease localized in the udder, and tuberculous meat were capable of producing tuberculosis in the consumer.

It will be interesting to refer at somewhat greater length to inoculation experiments and clinical observations bearing on the above points.

The elaborate investigations of Cornet,⁸ in the Berlin Institute of Hygiene, in regard to the distribution of the tubercle bacilli in the air, are particularly instructive. The dust from twenty-one wards of seven hospitals, from three asylums, two prisons, from the living-rooms of sixty-two phthisical patients in private practice, from "out-patient" departments, from the public streets and from inhalation experiment rooms

was gathered, and its virulence or innocuousness determined by inoculation of susceptible animals. Of ninety-four animals inoculated with the dust of hospital wards, twenty became tuberculous. Virulent bacilli were obtained from fifteen out of twenty-one medical wards. Negative results, on the other hand, were obtained from the dust of the surgical wards, also from that of the streets and the inhalation rooms investigated. Of one hundred and seventy animals inoculated with dust from the living-rooms of consumptives, thirty-four became infected. As ninety-one of the one hundred and seventy died of septic disease, it is probable that the above percentage of animals in which tuberculosis was produced does not accurately represent the specific (tuberculous) virulence of such dust. The dust was taken from the walls, articles of furniture, picture-frames, etc. From the room of a consumptive in a private house, virulent bacilli were obtained six weeks after her death.

Cornet records the fact that he did not once find infective bacilli in the rooms of those patients who used only spittoons for the sputum, although especially careful search was made in these instances. Equally valuable evidence on this point is furnished by Trudeau.⁴ In his sanitarium at Saranac Lake, where rigid rules, in regard to the use of proper receptacles for the sputum, are enforced, and its efficient disinfection or destruction is accomplished, not a single employee has acquired tuberculosis during the six years since its institution.

In Dettweiler's sanitarium at Falkenstein, where presumably similar precautions are taken, a similar experience is claimed.

With such observations before us, further *clinical* statistics may be unnecessary, but are not without interest.

In response to questions sent, in 1883, by the Collective Investigation Committee of the British Medical Association to physicians throughout Great Britain,⁵ asking for their personal experience on the communicability of phthisis, 1,078 communications were received. Of these, 673 were to the effect that cases of tuberculosis originating in infection had not come under their notice. Of the remaining 405, 261 were regarded by the Committee as positive in evidence of communicability, 39 as doubtful and 105 as negative. Among the affirmative observers, 192 reported cases of probable infection of husband by wife and the converse, and in 130 of these cases there was entire absence of inherited predisposition on the part of the person infected.

Turning to our own country, the investigations of Flick⁶ are of much interest. The localization of, and mortality from, tuberculosis in one of the wards of the city of Philadelphia, for a period of twenty-five years preceding 1888, were very carefully studied by him. It is shown that while less than one-third of the houses of the ward became infected with tuberculosis during the twenty-five years prior to 1888, considerably more than one-half of the deaths from this disease during the year 1888, occurred in infected houses. Inasmuch as there were more than twice as many non-infected as infected houses in the ward, a preponderance of deaths in non-infected houses would be expected.

Cornet's investigations of the health statistics of the Catholic Nursing Orders of Prussia,⁷ may be considered as supplementary to those of the same author which have already been described. Thirty-eight con-

vents were selected, representing a yearly average of 4,028 persons, and the statistics relate to the twenty-five years preceding the year 1889. It is known that the general annual death-rate from tuberculous disease is from one-seventh to one-fifth of all deaths. Among the above orders, the enormous average mortality of 62.88 per cent. is shown to be due to tuberculosis alone. In nearly one-half the convents it even rises to seventy-five per cent., and in two "Mother Houses," it was the sole cause of death. In others, the death-rate from this disease varies from 40 to 50 per cent.

Cornet says that the different mortalities may be explained by the fact that some of the nurses are engaged in attending altogether, or, for the most part, upon surgical cases. The average age at death of the inmates is 36.27 years, lower by ten years than that of men engaged in trades notoriously the most unhealthful; that is, file-cutters, coppersmiths, locksmiths, blacksmiths, cotton-spinners, etc. If the mortality due to tuberculosis and that resulting from other diseases commonly regarded as infectious are both deducted from the death-rate in the Prussian State and in the convents, it is shown that up to the age of forty years, the death-rates in State and convents are remarkably equal. From forty to sixty years, the mortality due to non-infectious diseases is less in convent than in State. Even admitting the insanitary conditions of convent life, it is impossible to believe, with our present knowledge of the etiology of tuberculous disease, that it can produce it. On the other hand, these conditions are of the kind to lead to its rapid extension, when once introduced. It should be mentioned that the health of all persons on entering the Nursing Communities is excellent, admission being dependent upon medical certificates to this effect.

Among the numerous investigations^{8 9 10} of the infectiousness of the milk of tuberculous cows, I shall only refer to the very brilliant ones of our countryman, Dr. Ernst of the Harvard Medical School.¹¹ They surpass in their extent and importance those of Continental observers. Experimental inoculation in rabbits and guinea-pigs and feeding experiments in calves and pigs with both the milk and cream of tuberculous cows *without* disease of the udder, proved in the most positive manner that such milk is capable of producing tuberculosis in the consumer. Incidentally, in experiments with milk taken at random from the common dairy-supply of Boston, virulent bacilli were found in two instances.

If Dr. Ernst's experiments are supplemented with the clinical fact of the frequency of intestinal and mesenteric tuberculous disease in children, and with the statement made in the form of a resolution, by the United States Veterinary Association in 1889, that from ten to fifteen per cent. of the dairy stock of the Eastern States is tuberculous, this subject assumes very grave importance. Although investigations have shown that tuberculous meat as such is infective, further experiments are necessary to determine whether those parts of a tuberculous animal usually used for food and not specifically affected, are harmful.

I have been able to collect a large number of cases of probable inoculation-tuberculosis in the human being. Many of them occurred through infection of post-mortem and dissection wounds. Among others, the following are of interest:

A healthy girl of 14 years, without inherited predisposition, became locally infected through wearing

the ear-rings of a consumptive. A tuberculous infiltration of the glands and general infection followed.¹²

A male child, very vigorous at birth, began to suffer when three years old from eczema of the skin of the abdomen. Bacilli were searched for, but not discovered. After four years of age, he constantly slept with his consumptive mother, and bacilli were shown to be present in the eczematous vesicles.¹³

A student received a slight wound in dissection; a nodule appeared at its site and a swelling of the glands of the forearm followed. The glands were excised, and showed central cheesy degeneration.¹⁴

Ten Jewish boys were circumcised by the same physician only a short time before his death from consumption. There is positive evidence that the saliva of the operator came in contact with the preputial wounds. The first symptoms of infection developed ten days later. Three of the children died of tuberculous meningitis, three of marasmus, and one of intercurrent diarrhoea. Three survived, but developed tuberculous adenitis.¹⁵

Accumulated experimental and clinical investigations in demonstrating the most common sources of infection, namely, the sputum of patients suffering from pulmonary tuberculosis, the milk of tuberculous cows, and finally, though to a much less extent probably, tuberculous meat, clearly indicate the direction which prophylactic measures should take.

The enormous number of tubercle bacilli contained in the sputum of patients suffering from pulmonary tuberculosis, even admitting that many of them are dead, as Kitasato very recently has shown, is well known. In a series of investigations kindly made for me by Dr. T. Mitchell Prudden in 1891, as many as 21,460,000 were computed to be present in the daily sputum of a single patient. Nuttall's experiments¹⁶ conducted in the Johns Hopkins Laboratory, give quite similar results.

Sawizky¹⁷ has shown, moreover, that tuberculous sputum, dried and preserved under the conditions which usually obtain in the dwelling-house, preserves its infective properties for two and a half months.

Stone's experiments,¹⁸ if corroborated by further investigations apparently show that its virulence may be extended for as long a period as three years. If we further consider the exceptional resistance of the tubercle bacilli to the action of both chemical and other antisepsics, the efficient disinfection or destruction of tuberculous sputum becomes of vital importance.

Chemical Disinfection. — Carbolic acid, potassa, sulphate of copper and chloride of zinc, all in solutions of 1-500, were found by Grancher and de Gennes to be useless.¹⁹ Histological examination of the sputum so treated showed no change in the appearance of the bacilli and inoculations proved that they were still active. Later experiments²⁰ have demonstrated that carbolic acid even in ten per cent. solution and after twenty-four hours admixture with the sputum, is without effect.

Corrosive Sublimate is valueless through the coagulation produced by it of the albuminoids contained in the sputum. The experimental investigations of Schottelius and Spengler²¹ with the newer antisepsics, creolin, aseptol and lisol, of which much was hoped, have also been disappointing. Ten per cent. solutions of creolin and aseptol were found to be absolutely without effect, even after twenty-four hours.

Lisol, however, in ten per cent. solution proved to

be capable of rendering the sputum sterile in twelve hours.

These results indicate in the most positive manner that we possess no practical means at present for efficiently disinfecting sputum by chemical antiseptics.

Experiments with heat, on the other hand, have shown that the tubercle bacilli rarely survive a temperature of 80 C., and are invariably killed at temperatures varying, according to different observers, from 90 C., to 100 C.²¹ Simple rinsing of the cups or other receptacles of the sputum with boiling water is not sufficient and is not without danger to the attendant. Numerous observers report cases of infection of cuts from sputum. (V. Eisberg,²² Fleur,²³ Holst,²⁴ L. Pfeiffer²⁵ and others.)

In view of these facts, every consumptive should possess the knowledge that while his disease is in reality a menace to those about him, the foil is within his reach. He should be taught never to use a handkerchief for the sputum, never to spit upon the floor. An appropriate receptacle of glass, china or paper, partially filled with water should be provided for the sputum, which should be thoroughly disinfected or destroyed at least once in twenty-four hours. For its disinfection in hospitals, an ordinary Arnold's sterilizer, of sufficient size to accommodate all the cups of a ward, and in which they should be placed daily for a half-hour, may be used.

A far better method in my judgment, is the destruction of the sputum by fire. The method at present in successful use in St. Luke's Hospital and which is of easy application in private houses, consists in the use of paper boxes, which are daily supplied to each patient, and at the end of twenty-four hours destroyed with their contents, by fire. They are of convenient size, are very inexpensive, and the preparation used in their construction prevents all leakage. The floors and the walls of living-rooms and of hospital-wards of consumptives should be scrubbed or wiped with damp clothes, not swept or dusted. The cast-off clothing of such patients should be submitted to the action of live steam or to the degree of heat described as sufficient to destroy the tubercle bacilli.

Public sentiment, in the absence of legislation, should compel the proprietors of hotels and boarding-houses at health resorts, at least, to take such measures as can be designated with our present knowledge, for disinfecting the living-rooms of consumptives. Further investigations are urgently needed to determine the most efficient and practical means for accomplishing this object.

A further most important prophylactic measure consists in the systematic veterinary inspection of dairies, particularly those of large cities and of slaughter-houses. Commercial considerations have secured the necessary legislation for the inspection of the pork products of the United States; a consideration of the public health should be sufficient to secure a similar legislation to minimize the sources of infection of tuberculous disease.

A bill for the inspection of dairies and the slaughter of tuberculous animals, I am happy to state, will probably be introduced into the legislative houses of the State of New York during the present session. Such an example, it is reasonable to hope, would gradually be followed by the legislatures of other States.

In the meantime, in the absence of necessary legislation, the only safeguard possessed by the public

against possible infection through dairy products, consists in the sterilization of milk and cream by boiling, or through the use of steam sterilizers.*

Many of the prophylactic measures which have been mentioned have already been embodied in the form of suggestions or in laws by various governments and municipalities abroad, and the Board of Health of the City of New York has issued some admirable rules "to be observed for the prevention of the spread of consumption."

In considering the prophylaxis of tuberculosis, I have purposely confined myself to measures designed to destroy the vitality of the bacillus outside of the human body and to means for minimizing the sources of infection, in the belief that such efforts are of far greater relative value than those directed toward increasing the resisting power of the individual. I shall even go farther, and thus cease to be open to the reproach that the clinician's interest in the therapeutics of the disease is almost to the exclusion of that in its prophylaxis, and assert that infinitely more can be accomplished towards the elimination of this terrible scourge by making practical use of our present exact knowledge of its etiology and prophylaxis than by any or all therapeutic measures at present at our command. As has been well said, "It is the seed of the disease, without the implantation of which there can be no harvest of death, that we are now most able to reach and destroy." We shall fail then in our duties as true physicians, if we do not scatter broadcast among the laity this knowledge. From a full appreciation of the dangers at their doors and a knowledge of the means capable of diverting them, surely good fruit will be borne, even to the *enactment and enforcement* of laws for the protection of the public health.

In turning our attention to the remedial treatment of tuberculosis, our thoughts naturally are directed first to Koch's tuberculin.²⁶

His hypothesis of its specific mode of action is as follows: He particularly states that other explanations are possible and may be more correct. The tubercle bacilli in their growth produce in the living tissues, just as in artificial cultivations, certain substances which have various but always deleterious effects upon the living elements of their surroundings, — the cells. Among these substances is one which, in a certain concentration, destroys living protoplasm and causes it to undergo what is known as a coagulation necrosis. The necrotic tissue is unfavorable to the nutrition of the bacilli; its further development is checked, and finally in some cases its death follows. If the amount of the necrosis producing substance be artificially augmented, as he believes it to be by the introduction of tuberculin into the system, not only will the extent of the necrosis be increased and consequently the conditions of the nutrition of the bacilli be more unfavorably affected, but also more completely necrosed tissues will disintegrate and slough, and where this is possible, take with them the enclosed bacilli, carrying them outward. Large doses of tuberculin are capable of giving rise to a certain amount of pyrexia and other symptoms in healthy persons, he believes, through irritative influences exerted upon certain elements of the tissues, probably on the white corpuscles of the blood or cells closely related to them.

* Investigations conducted in the Imperial Health Bureau of Berlin demonstrate that tubercle bacilli also retain their vitality in butter and cheese, frequently for weeks.

The necrosis producing substance in tuberculin, Koch now tentatively believes to be an albumose or a substance closely related to it. Many elaborate criticisms of this hypothesis, both theoretical and based upon experimental and clinical investigations, have appeared during the past year.

In a very recent monograph by Rosenbach,²⁷ the author denies both a specific affinity of tuberculin for tuberculous tissue and the specific action claimed for it. The general reaction and constitutional disturbance following its inoculation, he believes to be due to a general irritation set up in the body, which, according to its degree, can assume the characteristics of an inflammatory action, in some cases even of a purulent type. The degree of the reaction, particularly of the fever, depends upon the predisposition of the individual to febrile disturbance. Similar constitutional disturbances have been shown to follow the inoculation of cantharid salts and the protein of other bacteria. Rosenbach asserts that the specific activity of tuberculin can only be demonstrated when it is proved that substances derived from other micro-organisms can produce fever exclusively in subjects who are the hosts of bacteria of the same kind, and further that they can evoke reactions only in tissues in which changes have occurred from their action and elsewhere remain without effect. He claims that hitherto this has not been shown. The author expresses a guarded opinion whether tuberculin produces an actual necrosis of tuberculous tissue; if it occurs, he believes it is not a coagulation (specific) necrosis, but rather is secondary to an acute inflammatory process and exudation.

A new light has been thrown on the nature and action of tuberculin through the investigations of Wm. Hunter, of England, and the German pathologist, Klebs. As early as January, 1891, the former began his investigations.²⁸ Starting with the assertion of Koch that the remarkable properties possessed by it, unfortunately for evil as well as for good, were due to a single active principle which constituted but a fractional part of the extract, he believed that the chemical behavior of this hypothetical principle, which was described by the discoverer as a derivative of albuminoid bodies, could not possibly apply to any one known chemical substance.

His studies had for their object:

- (1) To isolate the chief constituents of tuberculin and to determine their chemical nature.
- (2) To ascertain their action with special reference to their power of inducing the two most characteristic effects of tuberculin, namely, local inflammation and fever.
- (3) To ascertain how far it was possible to eliminate all substances having an injurious action, and thus to obtain remedial without injurious effects.

His results may be summarized as follows, under the heads of Composition, Action and Therapeutic Value.

The chief substances found in tuberculin are: (1) Albumoses; * (2) Alkaloidal substances; (3) Extractives, small in quantity and of unrecognized nature; (4) Mucin; (5) Inorganic salts; (6) Glycerine and coloring matter.

Having ascertained that the only substances present in tuberculin with which the active properties could be associated were albumoses, organic bases of alkal-

oidal nature, and probably various extractives, he proceeded to determine by experiments on mice and guinea-pigs, to which of the above substances, tuberculin owed its characteristic properties, remedial and otherwise.

Four modifications of the original tuberculin were accordingly prepared by him. He has given to them the designations A, C, B and CB; and these terms will be retained in the present paper.

From extensive investigations with these modifications, he feels warranted in concluding:

- (1) That tuberculin owes its activity, not to one principle, but to several; that its action in producing local inflammation, fever and general constitutional disturbance is not a simple but an extremely complex one.
- (2) That its remedial and inflammatory actions are connected with the presence of certain of its albumoses, while its fever-producing properties are chiefly associated with substances of a non-albuminous nature.

(3) By the adoption of certain chemical methods, it is possible to remove the substances which cause the fever, while retaining those which are beneficial in their action.

(4) That the fever produced by tuberculin is thus absolutely unessential to its remedial action. (He is inclined to believe that the inflammation is almost similarly unessential, although admitting that under certain circumstances it may assist the action of the remedial substance.)

(5) That tuberculin possesses a truly remedial action and that this is to be found in a protein, that is, in an albuminous substance derived from the plasma of the bacilli themselves and not formed by their action upon the surrounding tissues; and, finally, that it is possible to isolate largely this protein.

Dr. Hunter's clinical investigations, in which he has been assisted by Mr. Watson Cheyne, with the above modifications of tuberculin, have led him to assert tentatively the following proposition: Modification A differs but slightly in its action from tuberculin. Modification C differs from tuberculin in being almost completely freed from the substance which gives rise to local inflammation. It contains, however, in a special degree the fever-producing agents, which may be regarded as interfering with the remedial properties and favoring rather than retarding the growth of the bacilli. Modification CB contains the remedial substance present in C, freed from the fever-producing agents. Its use, moreover, is unattended with any of the other constitutional symptoms following the employment of tuberculin. Modification B contains the remedial properties of CB with the additional property of inducing local inflammation. Its action is free, so far as has yet been observed, from ill effects.

From the marked improvement which Dr. Hunter has seen occur in cases of ulcerative and other forms of lupus, where it is possible to watch the local changes from day to day, under treatment both with B and CB, he believes the activity and probable remedial power of these modifications to be demonstrated.

It yet remains to be determined whether the improvement noted in his cases will be more or less permanent. The absence of marked local inflammation or of necrotic changes accompanying their use leaves the mode of action of the above modifications of tuberculin a matter of more or less speculation at the present time. I shall refer later to the clinical inves-

*Albumoses, chiefly proto-albumose and deproto-albumose, along with hetero-albumose and occasionally a trace of dys-albumose.

tigations of other observers and to some personal ones with Dr. Hunter's preparations.

Professor Klebs's researches have apparently been based on the same line of thought as the above, but were made quite independently of them.²⁹ Convinced that tuberculin produced in the human being many effects which had nothing to do with its action upon tuberculous tissue, and which could be avoided without affecting the latter property, he submitted tuberculin to various chemical processes, with the view of freeing it from its alkaloidal substances. Its noxious properties reside in the latter, he believes. He claims that the extracted principle represents the secretions of the tubercle bacilli and is a pure albumose. Experimental investigations in animals indicate that the injection of large doses of tuberculinocidin, as he terms the albumose, previous to inoculation with pure cultures of the bacillus, delays the development of tuberculosis to at least twice the usual period; moreover, that a complete resolution of previously developed tubercle may occur under its use.

The best results in animals were obtained when the tuberculinocidin was injected simultaneously with inoculation of the bacilli.

In such animals killed three months later, tubercle was scarcely present, and few bacilli were found. In cases where treatment was begun six weeks after experimental inoculation and continued for twenty-five days, either complete healing or a high degree of retrogradation of the tuberculous lesions was observed.

Of 75 critically observed cases of pulmonary tuberculosis in the human being, treated with tuberculinocidin, 18.6% are claimed to have been cured, and 60% improved. In a single case of supposed tuberculous meningitis, the symptoms also improved. Cases are reported in detail by Klebs, in which a successful issue occurred, both tuberculin and creosote having previously failed to give good results. The treatment being practically unattended with constitutional disturbances or fever, there is no interference with the customary life and occupation of the patient.

So far as I am able to judge from Klebs's statements, the remedial properties of tuberculinocidin reside wholly in its germicidal power, that is, in its ability to destroy the tubercle bacillus within the human body. He expressly states that no inflammatory process or necrosis of tissue is produced by it.

If Klebs's very positive statements on the above points are borne out by further extended observations, a far-reaching and very brilliant discovery has been given to the world.

In concluding his report, Klebs remarks: "That it only remains to determine the limitations which control the cure of the disease produced by the specific bacillus, whose destruction we have succeeded in accomplishing. The first cause may vanish, and yet the pernicious results of the conditions developed from it remain. When advanced destruction of pulmonary tissue has occurred, where the general vitality has greatly depreciated, and emaciation and marked impairment of the heart's function have taken place, cure is no longer to be expected, even with the removal of the first cause of these conditions."

We have now to consider some very interesting and noteworthy investigations of Roemer and Büchner.³⁰

The former, as the result of his experimental researches, has made the surprising announcement that the same reactions can be obtained in tuberculous guinea-

pigs from inoculations with proteine containing extracts from the bacillus pyocyaneus (green pus) as with tuberculin. He found that tuberculous animals died quickly after injections of such extracts, while healthy animals lived; that lesions occurred in the liver and spleen of such animals apparently quite similar, both macroscopical and microscopical, to those described by Koch as due to the specific action of tuberculin. Büchner has corroborated Roemer's observations of the effect of injections of the proteine of the bacillus pyocyaneus and has found similar effects to follow the use of the proteine of other bacilli, namely, pneumo-bacillus (Friedlander) and the bacillus prodigious. Inoculations of healthy men with minute doses of the proteine of the pneumo-bacillus or the prodigious were followed by redness and swelling at the point of injection and a local rise of temperature which gradually disappeared, and of quite similar character in the different persons experimented upon. Constitutional symptoms were not produced, Büchner suggests, on account of the smallness of the dose administered. The pronounced local reaction in comparison with that of tuberculin, he believes to indicate a more serious action of the proteine. Büchner concludes his report of his investigations as follows: "Are the proteine extractives of the tubercle bacillus alone capable of exciting a latent irritation to an appreciable inflammation and necrosis? Are not other ordinary excitors of inflammation, especially proteinines from harmless kinds of bacteria, possessed of the same power?" The observations reported by him, he thinks speak favorably for such a possibility, and open therefore in a practical manner new, and perhaps not unimportant, outlooks.

In the light of extended experimental investigations and of numerous clinical observations, the incorrectness of many of Koch's original hypotheses and conclusions is evident. It has been shown that tuberculin contains not one, but several active principles, respectively capable of producing different effects; that whatever remedial action it may possess resides *apparently* in certain of its albumoses, while its harmful properties are seemingly due to the non-albuminoïd substances present in the extract. With the knowledge that tuberculin is the concentrated fluid medium in which the bacilli have been growing, thus presumably containing the products of their growth and the proteins derived from their bodies. Prudden's experimental studies³¹ of the action of *dead tubercle bacilli* would seem to be further corroborative of the above views. His experiments indicate that the dead bacilli, freed so far as is possible from the products of their growth, are capable of enormously stimulating cell activity and of producing lesions morphologically similar to tubercle, but which are not *indefinitely progressive and do not tend to the production of an advancing coagulation necrosis and finally do not induce an infectious disease*.

A legitimate conclusion from these observations would seem to be that the coagulation necrosis which Koch's hypothesis regards as the remedial mode of action of tuberculin, is dependent upon a metabolic product of the growth of the bacillus.

In view of the remedial effects obtained by Hunter, Cheyne, and Klebs from the use of a tuberculin presumably freed from metabolic products and the apparent demonstration by Prudden that a constituent of the protoplasm of the dead bacillus, probably a

proteine, is capable of enormously stimulating cell activity, it is justifiable to feel that much light has been thrown on a most complex question.

Whatever beneficial results were obtained from Koch's original tuberculin, I am convinced were not through, but in spite of, a production of coagulation necrosis; and that the benefit claimed to-day by many from its use in exceedingly small doses, is partly through the avoidance of such an effect. In exceedingly minute doses it is possible that the action of the cell-stimulating proteine preponderates and thereby a remedial influence is exerted.

A rather large clinical experience now extending over a period of eighteen months, leads me to reiterate an opinion previously expressed: "that tuberculin contains a remedial principle." This view is shared, among our own countrymen, by Trudeau and Von Ruck, gentlemen who have enjoyed in their sanitaria, the widest possible opportunities for thoroughly studying the subject.

In a recent communication by Schede, of Hamburg,³² than whom no Continental surgeon has a larger clinical experience, a similar opinion is expressed. In concluding this portion of my subject, I cannot but express my abiding and earnest belief that the continued and exhaustive investigation of Koch's discovery will lead either to such modifications of the original extract or to the preparation of a new one based upon a similar principle, as will place in our hands an agent specific in character and remedial in tuberculosis, in a degree hitherto believed to be unattainable.

The results obtained in the wards of St. Luke's Hospital in the treatment of pulmonary tuberculosis with modifications of tuberculin already effected, will be appended to the present lecture.

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(To be continued.)

Original Articles.

THE PATHOLOGY OF PELVIC INFLAMMATIONS.¹

BY REGINALD H. FITZ, M.D.

PELVIC inflammations relate to those of the wall and to those of the contents of the pelvis. The former affect the parietal peritoneum and the sub-peritoneal fibrous tissue, while the latter concern the uterus, tubes, ovaries, ligaments, bladder, rectum, and, sometimes, displaced abdominal contents, especially the vermiform appendix, which have entered the pelvis. At this meeting it is presumable that the discussion will be especially limited to the consideration of the inflammations of the pelvic wall and of the female genital apparatus. Since inflammation of the peritoneal or sub-peritoneal tissue of one part is likely to become rapidly extended to another, it has been found convenient to speak of a pelvic peritonitis and of a pelvic cellulitis in contra-distinction to a metritis, a salpingitis or an oophoritis, although an inflammatory process in one of the organs concerned is likely to be associated with an inflammation of its peritoneal covering or adjacent fibrous tissue.

The term pelvic cellulitis dates back to elementary ideas of the structure of connective tissue and to erroneous views of the pathology of pelvic inflammation. Then, a cellular tissue was one containing holes, such as might be inflated, for example, the subcutaneous connective tissue; now, the only cellular tissue is one which contains cells, living or dead. In former times, the so-called cellular tissue was the place where pus and abscesses were often found, and a pelvic abscess was supposed to lie either in the peritoneal cavity, an encysted or circumscribed peritonitis, or in this cellular tissue of the pelvis, pelvic cellulitis.

At present, not only is the term, cellular tissue, becoming obsolete, but pelvic abscesses are known to occur with comparative infrequency in the pelvic connective tissue. What were, formerly, supposed to be so situated are, now, known to be, for the most part, cases of pyosalpinx, pus-tubes.

But an inflammatory process may lie in the connective tissue of the pelvis. It usually arises, in the female, in that portion of the sub-peritoneal fibrous tissue near the uterus, to which the distinctive term of parametrium is applied.

This parametrium is the loose, fibrous tissue which extends from the lower half of the uterus outwards between the peritoneal layers of the broad ligaments, in front and behind towards the bladder and rectum, while, downwards, it surrounds the upper part of the vagina. It is continuous everywhere with the pelvic fibrous tissue of which it is a part, and, thus is immediately connected with the sub-peritoneal, fibrous tissue in general and with the ischio-rectal and subcutaneous tissue of the perineum. The parametrium does not extend to the upper half of the uterus. From a point corresponding to the inner os of the peritoneum is closely applied to the muscular wall of the uterus, whereas below this point, the loose, fibrous tissue of the parametrium lies between.

In the case of an inflammatory process affecting the peritoneal covering of the body of the uterus, the term

¹ Intended as introductory remarks at the meeting of the Section in Obstetrics and Gynecology of the Suffolk District Medical Society, Wednesday, January 12, 1892.

perimetritis is applied to discriminate it from a parametritis affecting the loose tissue lying between the cervical portion of the uterus and the peritoneum. These two conditions may occur quite independently of each other.

The perimetritis tends to spread to continuous and contiguous surfaces of the pelvic peritoneum, and even to portions of the intestinal peritoneum which come in contact. It rarely extends for any considerable distance into the uterine wall.

A parametritis on the contrary, not only spreads laterally in every direction, following the course of the lymph- and blood-currents, but it usually reaches to the peritoneal covering of the parametrium, and, thence proceeds to the peritoneum of the pelvis and abdomen.

From the etiological point of view most severe pelvic inflammations are the result of an infection of the surface of the genital tract from without. The infective material and its products are either carried along the surface, from without inwards, to the ends of the tubes and into the pelvis, or through the wall, usually lacerated or ulcerated, into the blood- and lymph-vessels.

It is unnecessary to say that the infective substance is now regarded as of bacterial origin and as usually introduced from without through a lack of efficient cleanliness on the part of others during parturition or at operative attempts to induce abortion or to treat genital disease. The infective or septic varieties of pelvic inflammation thus, commonly, arise. In this series are also to be included those instances of auto-infection, through lack of sufficient personal cleanliness, where bacteria and their products invade the body through the genital tract, there having been no instrumental or manipulative procedures. The most striking instance of this auto-infection is to be found in the occurrence of, even fatal, peritonitis, during and towards the close of menstruation, by the dropping of infected catamenial fluid from the Fallopian tubes. This occurrence, it is needless to say, is unduly favored by the prevailing fear of menstruating women to keep the external genitals clean by washing during the monthly flow. Other illustrations are furnished by the so-called, spontaneous origin of puerperal fever and by the suppurative peritonitis which may result from a ruptured, tubal pregnancy.

Under the infective forms of inflammation are also to be included the gonorrhoeal and tubercular varieties. The former is now universally recognized as one of the most frequent and important causes of the chronic and recurring varieties of pelvic inflammation and whose appreciation is of the utmost importance in the treatment of this affection. The tubercular inflammations are of less practical importance since the resulting initial disturbances are usually insufficient to produce severe symptoms and the more important, tubercular processes elsewhere in the body are so extensive and serious as to divert attention from the former. In the tubercular, pelvic inflammations the infection is usually from the fibrillated end of the tubes, and is ordinarily discovered after operative treatment for some other supposed disease.

All pelvic inflammations, however, are not infective, although the severe forms are of this nature. The frequent presence of adhesions between the surface of pelvic tumors, especially uterine and ovarian, and the peritoneum are instances of a pelvic peritonitis, often so mild as to have taken place without suggestive symptoms. Still symptoms of greater or less sever-

ity may be associated with these milder varieties of non-infective inflammation, and may result from the rupture of an ovarian cyst, or from a twisted pedicle. Many retro-uterine haematoceles belong in this series. Such mild, non-infective, perhaps traumatic (mechanical or chemical) varieties of pelvic inflammation largely account for the rarity with which the pelvis is found free from adhesions at post-mortem examinations.

Before the days of frequent laparotomies the pathological anatomy of pelvic inflammation was, necessarily, studied after death. The lesions then found were the fibrous and fibrinous adhesions and membranes, the collections of serum, fibrin, pus and blood, with which all were familiar as evidences of old or recent, circumscribed or recurrent, pelvic peritonitis. The tubes were not infrequently found tortuous and obliterated, thickened and dilated, their contents usually watery, though sometimes cheesy or purulent. Those days furnished the natural history of pelvic inflammations and showed what would happen if the patients were, practically, let alone. But, of late years, it has been found that our knowledge of the pathology of pelvic inflammations was capable of a wider enlargement by the study of material obtained from the abdomen during life. The contributions of chiefest importance thus furnished were the diseased Fallopian tubes. It was found that a suppurating tube was the usual cause of a recurring, pelvic inflammation. A pus-tube often proved to be the chronic pelvic abscess, which hitherto had been supposed to lie in the pelvic, fibrous tissue, and whose healing proved so obstinate, when opened through the vagina, rectum or abdominal wall. This obstinacy became explained when it was evident that the result of the operation, as then conducted, was, essentially, to establish a tubal fistula, along which a catarrhal secretion would flow when pus ceased to be formed. The study of pus-tubes obtained by the laparotomist, in connection with Neogerath's investigations, has shown that the gonorrhoeal virus is the usual cause of this lesion and the important group of symptoms associated with its presence. It is, perhaps, well to say *usual*, and not *only*, for the experience of both laparotomist and experimental pathologist agree in recognizing the frequent failure of gonorrhoeal pus, escaping from a pyo-salpinx, to infect the peritoneum, while the pus in a tube resulting from puerperal or operative infection usually possess properties of extreme virulence.

The study of the tubes removed by the laparotomist has led to another important contribution to pelvic pathology. It has made clear that the usual cause of the pelvic haematocele and of the haematoma of the broad ligament was a ruptured tubal pregnancy. The customary failure of the rupture to produce more than a bland inflammation was readily explained when it appeared that the usual seat of the rupture was through that portion of the tubal wall corresponding to the placental insertion, and was thus removed from any continuity of surface with the tubal canal which might contain infective bacteria. On the contrary, a direct rupture into and through the tubal canal would offer a satisfactory explanation for the suppuration of the haematocele which, sometimes, precedes the operative attempts at the relief of the latter.

It may be stated, in conclusion, in order to promote the object of the meeting:

That pelvic inflammations affect the wall and con-

tents, and that inflammation of the former usually results from disease of the latter.

These inflammations are simple and infective. The former result from traumatic agencies, as a ruptured cyst, a twisted pedicle, a prolonged labor or a tumor. The latter are septic, gonorrhreal or tubercular. The sepsis results from bacterial invasion under conditions associated with pregnancy and menstruation, or with attempts at diagnosis and treatment, as in the passage of sounds, the use of tents, instruments and manipulations. The pelvic abscess is usually either a pus-tube or a circumscribed peritonitis, the former far more common than the latter, especially in chronic and recurrent cases. Abscesses of the sub-peritoneal, fibrous tissue of the pelvis may occur, usually proceeding from the uterus as a suppurative parametritis and rarely attaining a size to be confounded with the previous varieties.

Both the simple and infective forms of pelvic inflammation may result in adhesions, chronic adhesive peritonitis, and in thickenings of the parametrium, chronic parametritis. The former are the chief cause of uterine displacements, the latter are less frequent, and are usually so situated as to produce but little mechanical disturbance.

Simple forms of pelvic inflammation are frequently unavoidable, and, as a rule, require simple treatment, this chiefly medical; infective forms of pelvic inflammation are largely avoidable, immediately or remotely injurious or dangerous to life and well-being, and generally demand treatment by surgical methods.

THE TREATMENT OF PELVIC ABSCESS.¹

BY ARTHUR T. CABOT, M.D.

In speaking of pelvic abscess, I refer to cases where a considerable collection of pus exists, and in which, therefore, temporizing measures seem no longer applicable, but for which a radical operation for the evacuation of the pus in some way or other is called for. I hope to hear something said about the pathology of these abscesses. Practically, as they come to the eye of the surgeon, the parts are so tied up that it is very difficult to say whether the abscess is still confined to the Fallopian tube, whether it has already opened through the wall of the tube and is contained between the folds of the broad ligament, or whether, having opened outside of the tube, it is shut in by adhesion of the intestines above, making an abscess cavity with peritoneal walls, such as we see in cases of ulcerated appendix vermiciformis. The pelvic abscess having peritoneal walls may also result from inflammation occurring in an hematocoele.

The medical journals have been full of articles advocating the treatment of these abscesses in the pelvic cavity by laparotomy. Led by Mr. Tait, a number of enthusiastic laparotomists hold that the better way of treating all of these cases is by incision through the abdominal wall. Their obvious argument is that you get a better view of the condition, can proceed more intelligently to treat it properly, and can usually remove the whole abscess cavity, with its wall. While I am inclined to assent to this position for the most

part, I am far from believing that the abdominal incision is the only treatment for these cases, or that it is in all cases the best treatment.

The advantages claimed for a treatment by laparotomy are, quick healing and the absence of relapse. If the pus-tubes can be thoroughly removed, the case heals up almost like a simple ovariectomy, and the patient is quickly well. When the tubes have been thus removed, there is naturally little, if any chance of a recurrence of the abscess. These advantages, however, are not obtained in those cases in which an abscess being found which cannot be entirely peeled out, drainage has to be resorted to, for in such a case, there is quite as much likelihood that the abscess will be chronic, or will recur, when the drainage is put in over the pubes as when it is introduced through the vagina. In those cases in which drainage is to be established, the operation through the peritoneal cavity is more dangerous than the simple opening of the abscess into the vagina. Even in some of the cases in which the abscess wall is wholly removed, the close adhesion of it to the rectum may lead to a fecal fistula. These are in some cases serious disadvantages.

Further, it sometimes happens that one removes tubes and ovaries unnecessarily. It is very difficult for an operator who has just opened the abdomen to do a radical operation and who feels that, in order to justify the operation he must obtain a permanent cure, to leave a doubtful tube on the other side. He perhaps removes a large pus-tube from one side and finds the other tube somewhat thickened. It is then often hard to tell whether this may be left, or must be removed; and in fact, Tait recommends invariably removing both tubes in these operations. In a young married woman, or in a woman who expects to be married, this may be a decided disadvantage.

The last disadvantage of the abdominal operation is that, after the removal of the tubes, the scars in the broad ligaments, which have at first shortened them, melt away, and leave the uterus with less support than before. In some of these cases I have seen a very troublesome tendency to prolapse and retroversion.

These are some of the reasons which make the abdominal operation fall short of a perfect cure. On the other hand, we know that these pelvic abscesses not infrequently seek an outlet into the vagina, and that even when they are not pointing, they are often easily felt from below. An opening made through the vagina is necessarily a dependent one and gives very good drainage. The disadvantages that are urged against an opening in this direction are, that it is slow of healing, leaving sometimes a fistulous opening; and that the abscess, when thus treated, is likely to recur. These disadvantages are ones which were attached to this operation largely in pre-antiseptic times, and do not hold in the same degree now. It has been my experience in a large number of these operations that if the drainage was kept up by a tube until the abscess had contracted down to a small fistulous tract, this fistulous opening almost invariably closed after the removal of the drainage-tube, and that the cure has been lasting.

Now, how are we to select the proper cases for one operation or the other? I should say that a localized abscess down in the pelvis, which is easily felt through the vagina, should be opened below. In some of these cases such as Dr. Chadwick has described, in which there is an almost board-like hardness of the

¹ Remarks made at the meeting of the Obstetrical and Gynecological Section of the Suffolk District Medical Society, January 13, 1892, during the discussion on "The Pathology, Diagnosis and Treatment of Pelvic Inflammations."

parts, if an abscess has formed, you may feel somewhere a softer, less resistant point, and pressure upon this is often somewhat painful. In such a case, after the vagina has been rendered aspetic, exploration with the needle may be safely made, and in case pus is found, a director can be passed alongside of the needle and upon this as a guide the incision can be made into the cavity. The incision should be a small one, and a dilator should be relied upon for afterwards enlarging the opening. Free cutting in this region sometimes leads to troublesome haemorrhage from the venous sinuses which exist about the uterus; but an opening made in the way that I have described is an almost bloodless operation, and I have never met with a haemorrhage which was not immediately stopped by the introduction of the drainage-tube.

After this operation, which I have done a good many times, I have not been troubled with a relapse in any case in which the tube was retained for the proper length of time. The mistake often made is that of taking the tube out before the abscess cavity has entirely closed down upon it. I use a T-shaped tube, cut short, so that it does not protrude from the vagina, and does not interfere with thorough vaginal douches, which are carried out with hot, antiseptic solutions two or three times a day. The tube, thus made, retains its place perfectly in the abscess, even when the patient is up and about.

When, on the other hand, the induration and hardness does not come down into close contact with the vagina, but where the Fallopian tubes can be made out as sausage-like swellings high up in the pelvis, we have a condition in which laparotomy is demanded. Between these two extremes, the judgment of the surgeon, guided by careful examination, must determine whether the pus in a given case is readily accessible from the vagina, or whether the chance of being able to thoroughly remove the pus cavity makes it wiser to approach the case from above.

The cases to which I have alluded in the above remarks are the more chronic ones. Occasionally we have a case of acute suppurative salpingitis, or an acute exacerbation in a chronic case, which may indicate the extension of inflammation to the peritoneum, and in such a case laparotomy is imperatively demanded. Dr. Chadwick spoke of the occasional difficulty of diagnosis between appendicitis and inflammation in the pelvis. This is one of the reasons which would make me prefer a laparotomy for those inflammations which extend high up in the abdomen, in order that the case may be thoroughly understood and intelligently treated.

I remember one such case in which, believing that I was doing an operation for appendicitis, I found two very large pus-tubes and a great deal of free pus in the pelvic cavity. In that case the evidence of abdominal inflammation was clear; the laparotomy was the only operation thought of, and the patient made a good recovery.

Before closing these rather desultory remarks, I wish to speak of one puzzling case, in which with every sign of an abdominal abscess, I operated and found no abscess. The patient was a girl of fourteen, who for four or five weeks had suffered from a good deal of pelvic inflammation with pain and high fever. This followed exposure from sitting on the damp ground at the close of menstruation. A hard mass was to be felt rising up out of the pelvis, well towards

the umbilicus, and the pelvic cavity was filled with a mass of bony hardness. The pain and high temperature persisted for so long that it led to the belief that there was pus somewhere in this cake of exudation. As she was running down-hill an operation was decided upon, and I made an incision over the mass, in the median line. The peritoneum was thickened and adherent to this mass, so that I did not at first open the general peritoneal cavity. After plunging a needle, and then a trocar, into the tumor in several directions in search for pus and finding none, I then opened the general peritoneal cavity above in order to get a clear idea of the topography, and found rising out of the pelvis an irregular mass of exudation which bound all the organs together, and so masked them that you could not tell where the uterus, or other pelvic contents were. No softening could be felt anywhere, and feeling very much dissatisfied with the operation I sewed up the abdomen. From that moment she made a good recovery. The mass rapidly disappeared, and we were all very much gratified, although we did not know why it should have done so.

I have since heard of other similar cases, and I have no doubt that gentlemen who are more practised in gynaecology have seen many such. It was, however, an unique experience at that time to me.

Clinical Department.

A CASE OF COLOCYNTH POISONING,

BY WM. A. HOLME, M.D., BOSTON.

As instances of colocynth poisoning are somewhat rare, I desire to put on record, through the columns of the JOURNAL, a case which occurred in my practice last year.

Miss M., a delicate young woman of twenty-five, finding herself pregnant, and wishing to induce abortion, acted under the advice of a dressmaker who recommended taking powdered colocynth in hot gin as an infallible remedy.

The amount taken, was, as near as I could judge, about a quarter of an ounce of the powdered drug in a half-tumblerful of gin. This mixture was swallowed at about ten P.M., and I was called at twelve. On arriving at the house, I found the woman on the floor in a state of collapse. The face was pale and pinched, respirations shallow, and all the extremities cold. The pulse was absent in both wrists. There had been intense vomiting and purging, the later discharges being bloody.

She was placed in bed, and surrounded by hot-water bottles, and given brandy and digitalis hypodermically. She rallied in about an hour and commenced to vomit and purge again, and complained also of great pain in the stomach. A glass of warm water was given with the hopes that it might bring up any of the drug which might still be in the stomach.

Continuing to vomit until she was well-nigh exhausted, I concluded to stop the retching by morphia. Three-quarters of a grain were required to quiet the stomach, the amount being given in a space of half an hour's time. The resulting gastro-enteritis was treated by milk diet, and the administration of powders of bismuth subnitrate and salol.

She made an uninterrupted recovery in about ten days. Strange to say, abortion did not result, as might have been expected from the indirect action on the uterus.

AN UNIQUE DISLOCATION OF THE FOOT, AND OF THE ASTRAGALUS.

BY JOHN R. HAM, M.D., DOVER, N. H.

I WAS called on April 25, 1892, to S. W., the proprietor of a portable steam-mill, who, while sawing logs, came in contact with a piece of shafting which was revolving at the rate of six hundred times a minute.

He may not have made more than one revolution when his clothing gave way and he was rescued. I found the malleoli widely separated and projecting; the foot forced directly upwards and firmly wedged between the tibia and fibula; the depth of the foot from the extremities of the malleoli was obliterated; and the movements of the foot gone. There was no fracture, nor was there any external wound.

Under strong extension and counter-extension the foot was finally loosened and pulled down from between the bones of the leg, which came together with an audible snap when the wedge was removed.

I now discovered a complete backward dislocation of the astragalus, which lay between the tendo-Achillis and the posterior surface of the tibia.

The reduction of this bone was a much more difficult matter, but after half an hour's effort aided by two strong assistants in extension and counter-extension, and when on the point of despair as to a successful issue, I succeeded in slipping the bone in place.

Ether was not used because it was not on hand and, the patient being three miles from the city, it was not thought best to delay in the reduction.

Reports of Societies.

OBSTETRICAL AND GYNECOLOGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

GEORGE HAVEN, M.D., SECRETARY.

REGULAR meeting, Wednesday, January 13, 1892, the President, Dr. C. M. GREEN, in the chair.

ANATOMICAL SPECIMENS.

DR. C. P. STRONG: I have here a very small cyst of the broad ligament which I removed this morning, and which is interesting for one or two reasons. The patient was a girl of twenty-two, who had always been perfectly well except that she had menstruated only about once in eight or nine weeks, — irregular in that respect. Until eleven weeks ago she had not known what it was to be ill at all. Then she was upon her feet a good deal, and commenced to have pains in her left side which constantly increasing, had made her an invalid so that she had spent most of her time in bed since I saw her for the first time about three weeks ago, and then made out a cyst of some kind. I thought it was a small dermoid back of the uterus. I advised operation on her at once without any treatment because the family were dependent on her efforts to earn money. I operated to-day and found this cyst lying in the broad ligament. This ovary

which was also removed, was very much larger than now appears, due to a large cyst in its interior which has been ruptured. The tubes were apparently perfectly normal.

Another interesting point is that the broad ligament of the other side is similarly affected, the only difference being that on the right side the cyst growing in exactly the same location was about the size of an American walnut. The right ovary contains numerous small cysts, but as I did not see any reason if the cysts were opened and their walls destroyed that they would grow again, under the circumstances I thought it best to run the risk of a second laparotomy at some future date and allow the ovary to remain. That ovary was considerably enlarged. I laid open the cyst and thoroughly cauterized its interior wall.

The point of interest aside from the condition of the tube and the parts on the other side being similarly affected, was the great amount of disability arising from the presence of these cysts, and the fact that they had come on so suddenly. There were no adhesions, nothing to account for the great pain from which she certainly did suffer.

THE PATHOLOGY, DIAGNOSIS AND TREATMENT OF PELVIC INFLAMMATIONS.¹

DR. J. R. CHADWICK: There are so many starting-points for inflammation in the pelvis that it is hard to speak of the diagnosis and go over the whole ground. What we have to consider generally are pelvic peritonitis and pelvic cellulitis. While the symptoms do not vary essentially between the two, my experience would teach me that they vary somewhat in degree, that is, that a pelvic peritonitis gives rise to much more violent symptoms than pelvic cellulitis. The symptoms briefly may be said to be first a chill followed by pain, constant and lancinating, and fever with, on the second or third day, more or less metrorrhagia with some distention of the bowels, sometimes a diarrhoea, not regularly. Those, I presume, would be accepted as the symptoms that are generally present.

In peritonitis of course the location of the pain in the early stage is characteristic of the part where the inflammation originates. From that point of origin the disease may spread indefinitely. Of course it involves more or less all the organs which are invested with peritoneum, habitually starting, as the pathology to-day I suppose would say, in a large number of cases from inflammation of the tubes, originating undoubtedly often from haematocele, and, as I believe, originating sometimes from traumatism; that is, I cannot satisfy myself that the cases are all attributable to the introduction of germs, though I know that is held by many.

In regard to the diagnosis, we have had the symptoms of the physical conditions. The most striking is the induration which is felt through the roof of the vagina, especially the posterior cul-de-sac. I should say, before going further, that in my experience the pelvic peritonitis is the common disease. Pelvic cellulitis is extremely rare, a statement that is in opposition to what most of our older books held. I have not found one case of cellulitis to one hundred of peritonitis according to my diagnosis. The induration which is felt by the vagina is of course limited in the case of peritonitis to the peritoneal cavity, that is, it

¹ See articles by Drs. Fitz and Cabot on pp. 491 and 493 of the Journal.

cannot descend lower than Douglas's cul-de-sac. There is furthermore an infiltration into the tissues over which that peritoneum lies. You find the peritoneum firmly adherent there, absolutely immovable, and the chief feature which is almost pathognomonic, is the board-like feel within the first two or three days of a pelvic peritonitis. I say board because it runs straight across. There is insinuation of the finger between the effusions and the walls of the pelvis as is possible when the pelvis is occupied by fibroid. Then you have a distension of the abdomen which more or less interferes with examination, but by the bi-manual examination you can pretty generally feel the extent of the effusion. The body is immovable, but by persistent abdominal pressure you can get a little intimation of an impulse through this mass of effusion. In two or three weeks the mass loses its hardness and feels cartilaginous, and from cartilaginous into less rigid feeling; finally, in the later stages, it seems as if you could not push the vagina up as far as it ought to go. You have had of course with this disease constipation either naturally or brought on by the use of morphia. There is generally some irritability of the bladder, though not always. If the effusion is in Douglas's pouch, you have the uterus shoved forward against the pubes, or if it is more lateral, transferred to one side or the other.

Then for cellulitis, the cellular tissue lies beneath the peritoneum and consequently you frequently have a cellulitis more extensive laterally and extending generally rather lower in the pelvis. It is a matter of degree, and you cannot always distinguish between the two. As the effusion is absorbed you find the uterus generally moving back into its place, but not always. It often may have contracted adhesions in the place to which it has been pushed, adhesions resulting from the same inflammation of which the effusion crowded it over. You may ultimately have the uterus retroverted or crowded down into anteversion. It may be more essentially an inflammation of the peritoneum covering the uterus, in which case the uterus may be covered with an effusion which makes it four or five times its natural size. Once in consultation I diagnosed peritonitis complicating a fibroid tumor. Two or three months afterwards the doctor wrote to me that the fibroid had disappeared entirely with the effusion. It seemed as if I had erroneously mistaken this large mass for a fibroid and it had been absorbed.

Now in the way of differential diagnosis, there are a great many things which may be mistaken for these common diseases. I spoke of salpingitis as being the starting-point of most of these attacks of peritonitis; and we have consequently a difficulty in diagnostinating between a very moderately circumscribed peritonitis and suppuration in the tube without any escape of pus.

Inflammation of the ovaries I have put down very rarely in my books in the last ten years, and it seems as if in the pathology of women the diseases of the ovaries other than cystic enlargement have disappeared pretty much, that is, the woman no longer exists on account of her ovaries, but for something else. I have seen a few, and lately very few, cases of inflammation of the ovary recognizable as a small rounded body somewhat enlarged and tender, rarely accompanied by fever or acute pain, and I do not find very many reflexes, not as many as other men apparently do.

We have, of course, in the differential diagnosis to think of all the varied diseases that may occur in the abdomino-pelvic cavity. We have to bear in mind psoas abscess which may come down and produce symptoms there, though rarely. We have to remember inflammations of each of the different organs that are there and the tissues around them, for instance, the various tissues of the kidney, dropsical kidney or floating kidney. I have found a floating kidney in the pelvis supposed to be a fibroid. Perinephritic abscess may not infrequently be taken for pelvic. You have to bear in mind all the renal colics and ureteral colics and various diseases of the bladder, which in rare instances puzzle you, as well as morbid growth. Perhaps the principal diagnosis is between these inflammatory affections and cysts of the ovaries and fibroids of the uterus. You have to bear in mind that any of these tumors are liable to inflammations within themselves as well as inflammations around them; that there may be ulceration and inflammation and suppuration inside of an ovarian cyst that will give rise to fever, and perhaps adhesions on the outside of it to the pelvis which puzzle you a good deal. Generally you can distinguish a tumor by the fact that the induration does not run straight across the pelvic floor. You may have a fibroid that is inflamed or sloughing or has inflammations around it.

Then you have the catarrhal diseases of the intestines which sometimes cause fever. There, of course, you have the diarrhea to aid you chiefly in your diagnosis, though that is not an absolute sign. You have tympanites on percussion, and you have the tenderness universal, and vomiting, and other symptoms, which generally will help you.

Intussusception, constriction of the intestine and stricture all need to be borne in mind, and morbid growths of the intestines and appendicitis. I remember very well a case I saw with Dr. G. H. Lyman in the City Hospital. A young girl had a tumor on the right side of the uterus, bigger than an apple, attended with some fever; and I think every one diagnosed an ovarian cyst with some inflammation around it. To the surprise of every one, after two or three weeks, that disappeared. She came in later on, and it was again found. Then I saw her outside a number of times, when the tumor would appear and disappear. All this happened eight years ago, before we had learned so much about appendicitis. Finally, I operated, and got down upon the intestine, which was matted together on the right side, in a mass containing a bluish place, into which I put the aspirating needle and got pure blood, which scared me, and I let it alone and put a drainage-tube down to that spot, and in three days I had a gush of pus, and the whole trouble ceased. I have seen her within a year, and she is perfectly well. I have no question that that was appendicitis. At the time of the operation I did not think it was wise to go into it especially as the tapping with the aspirator drew out pure blood.

Of course ascites and tubercular peritonitis are pretty easy to distinguish. I do not mean that you can distinguish a tubercular peritonitis as tubercular necessarily, but you can distinguish it from pelvic inflammation.

Abdominal hyperesthesia, extra-uterine pregnancy. When you come to extra-uterine pregnancy the diagnosis has been pretty well threshed out of late years. It is a very important one to make, because it is im-

portant to act promptly. I think we rarely see such a case before the tube has ruptured. Taking it after rupture, you have a certain amount of exudation, which has pushed the uterus to one side, and a very peculiar condition of the patient, subject to lancinating pains, not severe enough to be those of peritonitis, not attended with fever enough for acute peritonitis, and often subsiding for a day and letting the patient get up. With that you invariably have a little loss of blood from the uterus, continuously after the fifth or sixth week. You find the uterus crowded to one side, enlarged; and if you are so lucky as to get the decidua when it is cast off, you have the means of establishing a diagnosis of pregnancy, not always that the pregnancy is extra-uterine because there is nothing absolutely characteristic in the decidua as to whether it is extra- or intra-uterine. Taking all the symptoms together, and making sure that the uterus is empty, you can establish a diagnosis with a very strong presumption of its being correct. I have not seen very many—four or five—such cases, and I have diagnosed them all. Once or twice besides I have written in my notebooks, "Look out for extra-uterine pregnancy," where it proved subsequently not to exist. Last year I had a case where, in fact, every symptom of extra-uterine pregnancy existed. The woman had been flowing a month, and the only thing different from what would be expected was that the pain was not on the side of the induration. Seeing her with Dr. W. L. Richardson later on, we decided that we must make sure that the uterus was empty. After dilating the cervix a little, I extracted the fetus from within the uterus. I was all ready to operate on the extra-uterine pregnancy, and every symptom was characteristic except the one point already alluded to.

I have overlooked a very important class of cases which probably are the starting-point of many cases of peritonitis, that is, haematocele; and haematocele may come at any point, may be of any size, and gives rise to more or less fever, sometimes a great deal, generally very much less than peritonitis. The symptoms are all less severe. It is not always fluctuating; in fact, you can generally feel it as more or less solid. There is generally less induration around it. Dr. Cabot will not have forgotten the case he saw with me last year where a woman came from St. Paul to have a big fibroid removed. On examining I found the fibroid, but the vagina so compressed by a pelvic abscess that I could not reach the cervix. I tapped it per vaginam and evacuated a quart of pus. In about ten days it had drained pretty dry, the tube slipped out, and the next day there was a sudden access of pain, and a tumor rising almost to the right kidney, with evidences of renal irritation, that is, casts, albumen, etc. I suspected that I had withdrawn the tube too soon, so that the abscess had filled up, or that the ureter had been occluded by this inflammation, and I had to deal with a distention of the ureter or kidney. Dr. Cabot saw her with me, and we could not make out certainly, but we rather suspected there was distention of the kidney. We tapped it, and found pure blood. It was nothing but an haematocele. She was well in two or three weeks, and has remained so ever since except for the fibroid.

We must not forget cancer occurring in the pelvis outside of the uterus. I have only seen two or three cases occurring in the retro-uterine space. One I saw in consultation with Dr. Sarah M. Crawford, which

she had diagnosed as cancer for some cause that I never could make out. I found no reason for believing it was cancer. She had a firm induration, not in the acute stage of inflammation, an old effusion as I thought—behind the uterus, and I said I did not think there was any cancer; but she died of cancer originating from that point.

DR. F. H. DAVENPORT: The subject of pelvic inflammations is so broad a one that I shall merely give in outline my views as to the treatment of the more common pelvic inflammations that we meet with, namely, pelvic peritonitis and cellulitis, and the most common cause probably of pelvic peritonitis—Inflammation of the appendages of the uterus.

The pathology of these inflammations has changed much in the last fifteen or twenty years, and of course the treatment has changed as well. In the first place, before the principal origin of pelvic inflammations was recognized to be an inflammation of the tubes, the treatment was almost exclusively medical. That was the case, partly because the true pathology of these inflammations was not recognized, and partly because there was still fear of opening the abdominal cavity except in cases where there was evidence of a large tumor. With the change in the views as to the pathology, and the greater freedom in opening the abdominal cavity, medical treatment was almost entirely neglected in the large proportion of these cases. Of late years, however, there has been a reaction on the part of surgeons, generally, to limit the cases treated by purely surgical methods to certain clear indications, and under those conditions and as a result of them, the medical treatment has come rather more prominently into the foreground. At least, there has been a disposition on the part of practitioners to see if good results could not be obtained in other ways.

In acute inflammations of the peritoneum and of the cellular tissue operative measures are rarely considered. The laws of treatment are well understood and very simple; they are to insure rest and quiet on the part of the patient, and such relief to pain and to the acute symptoms present as can be given by medicines and soothing applications. The application to the abdomen of hot applications, turpentine, mustard poultices and soothing applications to the vagina when the sensitiveness will admit of such applications in the way of douches, and relief to the pain by anodynes, rest in bed and supporting treatment are the principal measures employed. In one respect, however, there has been a change in the views regarding the treatment of acute pelvic inflammations, and pelvic peritonitis in particular, and that is in the use of opium. It was formerly taught, and supposed that the safety of the patient demanded that the bowels should be kept absolutely at rest since even the peristaltic movement might set up fresh inflammation, and favor the extension of the existing inflammation to the upper part of the peritoneal cavity. With that idea, large heroic doses of opium were given and the attempt was made, and usually successfully to so paralyze the bowels that there was no action whatever, but it has been found that under these circumstances the resulting paralysis favors tympanites to such an extent that it increases the amount of pain; the patient suffers from the constipation which is caused by the treatment, and measures for the relief of the constipation are liable to start up a fresh inflammation. Therefore, especially in cases of septic origin, after the acuteness of the pain has been to some

extent controlled by morphine, the present treatment, which to my mind is the best, is to keep the bowels moved at short intervals with calomel or salines, which not only seems not to have a bad effect on the existing inflammation, but even in some cases to apparently favor the arrest of the septic process which has perhaps begun. So much for the acute forms of inflammation.

With regard to chronic peritonitis, that is, the results that we find after an acute process has subsided, in the form of thickenings and deposits of lymph on the various organs, under those circumstances the treatment that has been carried out and described for so long is apparently still the best. Through the vagina we can reach the results of peritoneal inflammation better than through the abdominal wall; therefore applications to the vault of the vagina, large copious, hot water douches, depleting measures by means of glycerine tampons are the procedures most in favor. When we meet a case where there is a large deposit of lymph, such as Dr. Chadwick spoke of, with the uterus enlarged to several times its size by a deposit of lymph, I have found the use of large blisters to the abdomen to be most efficacious in reducing the size and promoting absorption of this plastic lymph. Several such blisters applied at intervals of ten days will, if the patient be kept quiet in bed, in the majority of cases result in a more or less speedy absorption of these products.

With regard to pelvic cellulitis, I agree with Dr. Chadwick that the cases which can properly be called cellulitis are now very rare. That such an inflammation of the pelvic cellular tissue does occur I am convinced. In the first place, autopsies have shown this beyond a doubt, and, secondly, operations have been performed for the relief of pelvic abscess where the abscess has been shown to be distinctly in the cellular tissue.

The acute cellular inflammations are most often the result of puerperal septic processes, and in their acute stage they demand no special medical treatment more than has been outlined. Where they go on to suppuration, surgical measures are indicated for the abstraction and relief of the pus.

We now come to what constitutes the most frequent source of pelvic inflammation, and that is inflammation of the tube. The principles which I lay down for myself in determining in a given case whether medical or surgical treatment shall be pursued depend upon two considerations: in the first place, the condition of the pelvic organs, and in the second place, the circumstances of the patient. It is certainly a well-recognized fact, now, that it is unwise and unwarranted to remove, in every case, tubes and ovaries when we find them enlarged. A good deal is dependent upon the character of the enlargement and condition of the patient. Given an enlarged tube, in the first place our efforts should be to determine whether such tube is enlarged as a result of serous or purulent accumulation, or whether it is merely a thickening of the tube wall itself with some inflammatory deposit in the surrounding tissues. Into the differential diagnosis between these conditions I will not enter. There are, I think, in the large majority of cases sufficiently clear indications to point to the actual condition of the tube itself. When pus is present it is of course a general rule that the woman is safer with the offending organs removed, but I think that even that is a state-

ment that goes a little too far, because it seems to me that there are cases even where there is pus in the tubes that can be treated by other measures than by their removal.

A second consideration to be thought of is, whether the woman can give up the time and can afford to take such care of herself as these cases demand. If she is a working woman, dependent on her own exertions for her support, and the history has been one of progressive invalidism, starting in the first place as pelvic inflammation, and from time to time showing acute exacerbations of the trouble, each attack perhaps making her worse than before, under these circumstances it seems to me hopeless to attempt to do much in the medical way. There, I think, the surgeon should be called upon to operate and remove the tubes. Where, however, a woman can favor herself in every possible way, can avoid those sources of fatigue and trouble which might bring on a fresh attack of inflammation, and can follow out our treatment carefully, I think that even in many cases where there is pus in the tubes a good deal can be done to relieve them without operation. Recently, we had a paper by Dr. Strong on drainage of the uterus in these cases, which showed to my mind very clearly that pus in the tubes, provided the uterine opening is patent, need not necessarily call for operative treatment.

I rely mainly in the medical treatment upon the most thorough depletion of the uterus and the surrounding tissues with glycerine. To accomplish this, I use prepared wool, which has the advantage of being elastic and soft and able to hold in its meshes a large amount of glycerine. I make some small tampons of this wool and saturate them with glycerine in such a way that a tampon of the size of a hen's egg would hold about two ounces of glycerine. These I place in the upper part of the vagina and leave them *in situ* for two or three or even four days, if necessary, though I prefer to leave them in but three days, and then to remove and cleanse the vagina and replace with another tampon. In this way I accomplish two things. In the first place, I furnish a soft cushion on which the uterus can impinge as the patient moves about, which results in marked relief to pain. In the next place, it causes a profuse watery discharge which is a direct relief to the congested condition of the pelvic organs. Iodine is sometimes applied, not necessarily in every case. The effect seems to be a relief to pain. In that way I have seen not a few cases of enlarged tubes (which to me were clearly the seat of, if not a purulent at least a catarrhal salpingitis) cured symptomatically, so that the patients were comparatively well, gained flesh, were relieved of the fresh attacks of pelvic inflammation which had come on at intervals of three to six months, and able to do a great deal more, and considered themselves comfortable. In one or two instances such treatment carried out carefully has been followed in married women by conception and the birth of healthy children.

Galvanism is another method of treatment which I have employed to promote the absorption of thickenings in the pelvis which have been the result probably of old tubal disease with extension to the cellular tissue or the peritoneum. It is a method that is worth trying. One thing more. It seems to me that the danger to a woman of rupture of a pus-tube is so remote that in my opinion it is hardly an argument in favor of laparotomy and removal of the tubes

unless other conditions make it imperative. It seems to me that considering the few cases we read of in which death has followed the rupture of a pus-tube, that the woman runs no more risk from that source alone than she would from a laparotomy even in the hands of a skilful surgeon. I do not think there is more than one to three per cent. mortality from this cause alone if tubes the seat of purulent effusion are allowed to remain; therefore, as an argument in favor of laparotomy, where otherwise it would not seem advisable, I do not think it is of very much weight.

DR. A. D. SINCLAIR: I think the subject has been reviewed mostly from the gynecologist's side and not from the obstetrician's. I think it has happened to all of us who have practised midwifery a long time to meet with cases of pure cellulitis, not peritonitis nor enlargement of the tubes, but an abscess or inflammation of the broad ligament or cellular tissue immediately around the cervix. I think that men who have pursued this subject for many years, very adroit indeed and well calculated to make good diagnoses, cannot all be mistaken in that thing, and that pelvic cellulitis is not so rare as we have heard it stated tonight. I think there is a good deal of theory afloat and a good deal written upon it. I remember when there was nothing said about pelvic cellulitis. There were various names given to this condition of things,—pelvic peritonitis, abscess, peri-uterine inflammation, and a host of other names. Bernutz and Goupil had been working up the thing for many years and published a monograph in two volumes, a most admirable thing, and created quite a revolution in the minds of men engaged in gynecology and obstetrics. I read this book, as also that of August Voisin on haematocele. I believe that Bernutz had a great many opportunities for making autopsies, and, by the way, that is the thing that is most striking. I have seen a great many cases of so-called pelvic cellulitis, peritonitis, etc., but I have not had the opportunity of seeing many autopsies, I think not more than three or four in my lifetime. There are the post-mortem records of two cases in the first volume of the City Hospital Reports. These cases were evidently pelvic peritonitis, and, by the way, the other night at the Obstetrical Society there was a paper on tubercular affection of the uterus. The first case recorded in that record of cases was one where, amongst others, was a uterus and tubes crammed full, I think, with tubercular matter and other débris. To go back to Bernutz, he had opportunities to make many post-mortems; and the conclusion one would come to who read his book would be that pelvic peritonitis was the chief cause of trouble, the tubes and ovaries being at fault. Conclusive as this book was, yet the world did not change its mind very much from the opinion that it held in regard to it, and spoke of these cases as pelvic cellulitis. Of course, they were wrong and were right. There are cases of both kinds. The pendulum has swung very completely of late years towards the exclusive view of its being dependent upon tubal trouble setting up inflammation around it. Inflammation of the cavity of the pelvis and effusion and the agglutination of intestines over the effusion makes it a large abscess sometimes, containing nothing but clear fluid (sometimes purulent); but there are cases of genuine pelvic cellulitis where the cellular tissue around the cervix becomes inflamed, where the inflammation extends to the broad ligaments and the tubes

have nothing to do with it nor the ovaries. These cases where abscess take place are generally cases that occur in puerperal women. It is not very common that we find abscess in non-puerperal women. I am speaking now of my own experience. I happened to see many cases in Boston in my own early practice. I was the first person to read a paper on pelvic cellulitis in Massachusetts; and in the discussion Dr. Jackson said he could not see that the cellular tissue around the cervix was of such extent as to form such a mass as was described. That might be or might not be. We know that the finger, the seat of felon, becomes an enormous mass; and I think we have just as good opportunity of finding a pretty large mass in examining through the vagina in a case of swelling of the cellular tissue around the neck of the womb, because it would appear larger than it really is if the patient was not under ether. That there are abscesses of the broad ligament in the puerperal state I am convinced. They come on about the tenth day after confinement. There is not so high fever as in pelvic peritonitis, it is said. The pain would subside, but not the swelling, to come on again about the seventeenth to the twentieth day. There would be increased fever. Very likely the abscess would discharge into the rectum or into the vagina, which was more rare, although we know that in chronic cases vagina, rectum and bladder become involved.

As to the symptoms of this thing, one of the earliest symptoms I used to observe was pain somewhere about the hip and dysuria and tenderness. Then there was sometimes nausea and a little cough,—reflex. The treatment of those days was the applying of leeches to the anus. I have frequently applied perhaps a dozen leeches to the anus. We also used poultices of bran or Indian meal over the abdomen. Sometimes the application of a blister made with nitrate of silver,—pretty smart thing it is, too,—and hot vaginal douches. I do not think as I look back that we used vaginal douches very much at that time. These cases of so-called cellulitis got well. The pelvis cleared up completely; the uterus became quite free. These were the puerperal cases. There was another lot and I dare say those are the ones where the trouble depends upon inflammation of the tubes from various causes. Those cases may in a patient with poor constitution reduce the patient to such an extent as to produce death. The mortality from that class of cases is not, I think, quite settled, but I think it will reach 10% to 15%. At one time I could find no statistics over 5%.

About taking away the prop of the uterus, I saw an instance of that where both ovaries and tubes were removed. The woman is worse to-day than three years ago.

DR. W. W. GANNETT: In connection with the pathological relations which Drs. Sinclair and Chadwick and Davenport have considered, it seems to me each has treated the matter from his own standpoint,—Dr. Sinclair from the obstetrician's and Drs. Chadwick and Davenport from the gynecologist's. That there is a cellulitis, such as Dr. Sinclair refers to, there can be no doubt. It represents a lymphangitis and occurs in puerperal cases. The material travels through the lymphatics and causes this inflammation in the broad ligament, and those cases are very frequently seen at autopsy. The gynecologists I suppose do not see them so frequently.

I should like to ask Dr. Davenport whether he meant by rupture of pus-tubes a rupture along their course, or would he include a discharge of pus from the fibrillated end?

DR. DAVENPORT: I meant a discharge of pus from the tube in such a way as to set up fatal peritonitis.

DR. GANNETT: It seems to me that perhaps Dr. Davenport laid too little stress upon that point. I can recall quite a large number of autopsies in which a peritonitis resulted from discharge of pus from the fibrillated end. It seems to me, viewed purely from the pathological standpoint, that a tube containing pus may be a constant source of danger to the woman in virtue of the possibility of peritonitis being set up thereby.

DR. E. W. CUSHING: In March, 1887, I reported 27 cases of operation for removal of diseased tubes. Since that time I have been active to a degree which I trust has not been pernicious in that direction. I wish to speak in regard to a subject that has been but little touched on to-night, and that is the neglected cases, those that do not get well under treatment. In my hospital service, and in consultation, I am more in a way to see these cases than any others.

One cause of all these troubles, which has not been dwelt on, is too much local treatment, or rather local treatment given without due precautions as to cleanliness and as to care.

Now, it is true that there are a large number of gentlemen who are practising the treatment outlined by Dr. Davenport, and undoubtedly a good many of their cases get better. Every once in a while, however, one gets worse; and there are two or three forms which that getting worse may take. The first is the case that gets rapidly worse with violent fever, tympanites, usually much aggravated by giving large doses of opium,—cases of spreading peritonitis. Those are comparatively rapid cases.

The second class of cases are those where, with long continued tubal inflammation, the ovary is affected. The ovary and the end of the tube are glued on to the lateral wall of the pelvis forming there an abscess. The outside wall of the abscess becomes eaten through by the suppurative changes and the woman begins to run down with symptoms of absorption of pus. In my experience, as long as the pus is retained in the tube itself without forming adhesions to structures where pus is to be absorbed, there is not so much general constitutional trouble. When, however, the wall of the abscess is formed on one side by the tissues of the pelvis, there is liable to supervene a condition of pyæmia.

Another course, which is generally and wrongly supposed to be salutary, is the opening of the pus-tube into the bowel: to be sure, in many cases where the opening is low down and the woman is strong, the tube seems to discharge itself into the bowel; the process of shrinking goes on, and the patient gets well. In far too many cases they do not get well. The tube fills again and discharges, and fills again, and so at intervals of from three weeks to three months the woman goes through the cycle of fever, pain, suffering and discharge, then relief, and then the whole thing comes on again. I have had a considerable number of cases with that history.

In these three ways,—by immediate acute inflammation, by general pyæmia and by long continued wasting through repeated opening into the bowel,—

the women run down, and require operation when they are in a desperate condition. If moderate treatment does not cure the woman, if she is an invalid and if there are signs of pus as evinced by high temperature, I think operation is justifiable and indicated; and if the operation is done reasonably early, it is not particularly difficult or dangerous. The difficulty and danger are from the neglect, from the recurrent attacks of inflammation matting everything together, from old openings into the intestines which have to be found if possible, although sometimes everything is so glued with lymph that it is neither easy to find them nor to prevent the occurrence of fistula afterwards.

In regard to opening of pelvic abscess, I think that Dr. Cabot's view is judicious, except that to my mind not enough stress was laid on the necessity of removing diseased tubes where you would hardly call the malady a pelvic abscess. I fully recognize the surgical tendencies of the last few years to operate on all pelvic abscesses from above. I have tried it, and have concluded that where a collection of pus can be readily reached from below, where, in other words, the vagina is pushed down forming a fluctuating mass behind the uterus, it is a good thing to let out that pus by the vagina; let it be done with the proviso that this may be a temporary thing that there may be pus-tubes behind which may have to be removed later.

Such cases, however, form a minority of those which require operation. They are mostly post-puerperal or follow abortion. In the great majority of cases the disease is in the Fallopian tubes, and the operation should be through the abdominal wall.

It is too late to enter on the question of the manner of operating, but at another time I shall have something to say on this subject.

AMERICAN PEDIATRIC SOCIETY.

(Concluded from No. 19, page 475.)

FOURTH Annual Meeting held in Boston, May 2, 3, and 4, 1892.

SECOND DAY.—AFTERNOON SESSION.

TYPHOID FEVER IN CHILDREN UNDER TWO YEARS,

by DR. W. P. NORTHRUP, New York.

Dr. Northrup's paper, purposed to strengthen the belief that typhoid fever, as a rule, avoided the first two years of life. Clinically: At the New York Foundling Hospital there had never been a case in the observations of twenty years. Cases had been suspected, but on autopsy did not prove to be such. Pathologically: A great many institution-reared children under one year, on autopsy, show the gross lesions of typhoid, judged by the scale of adult life. The Peyer's were enormously swollen and abruptly limited at their margins, sometimes showing a partial ulceration; mesenteric lymph nodes swollen; spleen enlarged, etc. Illustrative cases were narrated showing such lesions. Bacteriological investigation showed no typhoid bacilli (Prudden).

Dr. Northrup desired to raise the inquiry, whether, in the experience of those present, typhoid fever has been observed in children under two years. He had never met it in the wards or in private practice nor in two thousand autopsies.

TYPHOID FEVER IN CHILDREN,

by DR. CHAS. WARRENTON EARLE, Chicago.

Dr. Earle reported twenty cases of typhoid fever in children, occurring in private practice in a community where typhoid fever had been comparatively rare. Of these twenty cases, ten were males and ten females.

Mortality nothing. The youngest child was two years, the oldest fifteen, average seven and a half. Highest temperature 105.5°. Duration of the disease averaged twenty-six days. It varied from seventeen to forty-five days. The pulse ranged from 90 to 180 beats per minute. Bowels constipated in three cases, slight diarrhoea in ten and severe in seven. Vomiting in a very small percentage of the cases, in one or two persistent, slight in three or four. Tympany was manifested in a considerable number of the cases. Phlebitis took place in one case in the profunda femoris vein. Inflammation of the parotid on one side in one case. Epistaxis in eleven cases; in four severe, and the remaining slight. Bronchitis present in almost all the cases; in most of the cases slight, in a few severe. Haemorrhages from the bowels in none of the cases. Rose spots in all of the cases except one which was seen late. Splenic tumor in seventy per cent. of the cases. Pain in the abdomen almost universally present. Pain in the head usually complained of by the older patients and in the beginning of the sickness. In one case speech absent two weeks, in a second five weeks. In most cases the speech was slow and somewhat indistinct. Recovery of speech took place in every case. In one it was suddenly restored, and in two where there was complete absence of speech it was restored gradually. In one case complete deafness for two or three weeks. Otitis in one case. Symptoms referable to the nervous system, delirium with stupor, in most of the severe cases. Convulsions in two cases. Periostitis in one case. Relapse in five cases. Duration of the relapses fifteen to twenty days. Highest temperature in relapse 104.5°. Epistaxis in three of the relapses. Diarrhoea in four and constipation in one.

TYPHOID FEVER IN INFANCY,

by DR. W. S. CHRISTOPHER, Chicago.

The reader had met cases which seemed to be mild cases of typhoid fever in infants, but owing to the fact of invariable recovery, the diagnosis had not been confirmed. Physical examination of the abdomen revealed some flatulence but never meteorism. Enlargement of the spleen almost always to be made out by percussion. On the skin of the abdomen there was a typical roseola. Almost invariably the spots occurred as early as the third day, and rarely exceeded eight or ten in number. Pulmonary symptoms were very important. The bronchitis, always present to greater or less degree in the adult, was exaggerated in the child, and became a prominent symptom of the disease. It seemed probable that in many instances pneumonia was but a symptom of typhoid fever. The condition of the tongue was very important. It did not enlarge, nor become flabby nor indented by the teeth when they were present. It remained of normal size and shape, and was covered by a creamy coat, leaving the sides and edges free. The front portion was rather thinner than the main portion, and the fungiform papillæ might be seen through it, but later were often hidden. The uncovered edges and tip of the tongue were bright red. Tongue always remained moist. The face

did not assume the appearance of typhoid fever. He had never seen nose-bleed. The diagnosis was to be based upon bronchitis, the peculiar tongue, the roseola and the enlarged spleen. In the absence of any one of these, he would be unwilling to make a diagnosis of typhoid fever. The fact that so few adults had the disease might be in part explained by the fact that they secured immunity through a slight and unnoticed case in infancy.

DR. KOPLIK thought the Society owed a great deal to Dr. Northrup for having called attention to the fact that certain of the post-mortem appearances which in the adult were so characteristic of typhoid fever might in children be due to other things.

DR. JACOBI asked in what conditions and diseases this change in Peyer's plaques took place.

DR. NORTHRUP, in reply, stated that ulceration was not such a constant feature, but that marked enlargement of Peyer's patches in children was a familiar sight. He had observed it in at least 150 out of 2,000 autopsies. This occurred in all kinds of intestinal diseases, in fact after almost anything.

Referring to Dr. Earle's paper, he wished to state that he did not think enlargement of the spleen could be determined by percussion. He regarded palpation as the only reliable means of determining this point.

DR. BLACKADER thought he had in rare instances met with typhoid fever in young children. He had always supposed that the freedom which young children had from typhoid fever was due to the fact that they were not brought so much into contact with the sources of infection. Their food was more frequently cooked.

He also felt that it would be very difficult to determine enlargement of the spleen by percussion. The principal symptoms upon which we had to rely were prolonged febrile reaction, rose spots and bronchitis.

DR. WINTERS said he could not recall a single instance of typhoid fever under two years of age, though he had probably seen cases. He thought the rash was almost constantly present, so that he would not be willing to make the diagnosis in young children in the absence of the rash. In some cases the spots were very few in number, while in others they were very abundant. He thought a considerable distension of the abdomen occurred in most cases.

DR. HUBER could recall only two instances of typhoid fever under two years of age, in one of which Dr. Jacobi had made the diagnosis, and in the other case there were five older children sick from typhoid fever at the same time.

DR. SEIBERT had never made the diagnosis under two years. He called attention to the fact that a severe acute gastritis with high temperature and rapid pulse might be mistaken for typhoid fever. In one such case he had examined the breast milk and made a diagnosis of gastritis, and the temperature had gone down from 106° to normal in a few hours upon withdrawing the milk from the child. In the treatment of all cases of typhoid fever he used systematic irrigation of the colon with plain water, in order to take away whatever typhoid poison had accumulated in the lower portion of the large bowel. Under this treatment tympanites subsided, and diarrhoea, if intense, got better, and insomnia seemed to be influenced by it. Whenever he had a patient with diarrhoeal distension of the abdomen he took away milk until the diarrhoea had ceased. He had never prescribed an antipyretic

in four years, and never given a bath except to wash the patient for cleanliness.

DR. ADAMS did not question that typhoid fever occurred in young children, but claimed that the diagnosis was not uniformly made. The typical symptoms of typhoid fever in adults he did not find in very young children. In the treatment he thought too much attention was paid to high temperature. A high temperature which was not continuous was not dangerous. He had seen some unfortunate results from the use of antipyretics in case of high temperature, and had come to discard as routine practice any method of treatment as far as antipyretics or drugs were concerned. He had never practised irrigation in typhoid fever. While the principle seemed good, he would hesitate to recommend it in young children: first, because the intestinal tract should be kept as quiet as possible, and, secondly, because young children resisted such treatment, unless in a very low condition.

DR. ROTCH thought cases of typhoid fever in young children were rare. The diagnosis in young babies and children had to be made the same as the diagnosis in aborted types of the disease in adults, namely, by exclusion mainly.

DR. JACOBI had made the diagnosis of typhoid fever under two years, and had seen a few autopsies. The diagnosis in most cases was first suggested by exclusion. If he saw a case with a moderate amount of fever lasting sometime, without any local symptoms to account for it, he would suspect typhoid fever. If there were two temperature curves in twenty-four hours for sometime, it was typhoid fever unless there was good reason to take it for intermittent duplex. If the fever was well tolerated it would lead to the suspicion of typhoid. When also there was a roseola, he would say that it was typhoid fever. When in addition to that the spleen could be felt under the ribs it was typhoid fever.

PRE-TUBERCULAR ANÆMIA,

by DR. B. K. RACHFORD, Newport, Ky.

Dr. Rachford based his conclusions upon examinations of the blood of 168 convent girls, from a careful inquiry into their family histories and from physical examinations. His conclusions were that family tuberculosis was one of the great sources of anæmia. Girls from tubercular stock were more likely to be anæmic than girls from non-tubercular stock in the ratio of 72 to 7. Second, that tubercular lymphatic disease caused profound anæmia, while beginning pulmonary tuberculosis might not produce anæmia. Anæmia in cases with tubercular family history without apparent lesions, might be due to tuberculosis of the deep lymphatics. Pronounced anæmia without apparent cause, was strongly suggestive of concealed tuberculosis. Third, that deep-seated tuberculosis might confer immunity from pulmonary tuberculosis. Some of these anæmic girls with tuberculous family history, even though exposed often to tuberculosis, escaped from the disease not because the anæmia protected from the disease, but the cause of the anæmia, namely, deep-seated tuberculosis, conferred immunity from pulmonary tuberculosis. Fourth, the typical anæmia of tuberculosis corresponded more nearly to simple anæmia than to chlorosis.

DR. FISHER believed that cases of anæmia or chlorosis were very often cases of true tuberculosis. He cited the case of a young woman with an obstinate

form of chlorosis, who suffered from a severe form of diarrhoea, and in the discharges tubercle bacilli were found. There was no cough, and the anæmia had existed about two years before the bacilli were found.

DR. OSLER said the paper was an admirable piece of clinical observation. He thought the conclusions were those which had already been arrived at, that the anæmia of tuberculosis was very commonly a simple anæmia, not a chlorotic anæmia, though there were some instances, undoubtedly, in the early stages of tuberculosis in which the condition was what the French writers described as chloro-anæmia.

A CASE OF SPORADIC CONGENITAL CRETINISM, by DR. CHARLES W. TOWNSEND, Boston.

The case was that of an infant eighteen months old which was an idiot, but in addition to the other clinical symptoms of idiocy showed the characteristic cretin's habit of lying in a hibernating condition for from a few minutes to a hour every day, with the eyes vacant and staring, and the respiration scarcely to be noticed. The facial expression was characteristic of cretinism — edematous thickened skin, with narrow eyes, large tongue, partly protruded from the mouth, and the bones from the forearm and leg were short and out of proportion to the large body and head. The temperature was always subnormal, 96.8°, the respiration slow, twelve to sixteen to the minute. The child died at the age of two years from some intestinal trouble.

DR. HUBER said that cases of cretinism, semi-cretinism and the cretinoid condition were rather frequent in the tenement districts in New York. In the syphilitic cases we did not get that enlarged thyroid so common in the cases that occurred in Switzerland. In such cases the thyroid was very poorly developed or absent. He had seen one or two of the semi-cretins who had attained the age of eighteen or more. They had a fair amount of intelligence, the characteristic facial expression, the long antero-posterior diameter, the large head, and were only twenty-seven to thirty inches tall.

DR. OSLER said that no case had come under his personal observation until recently, when a case was brought to him from Maryland. It was a perfectly typical case. There was no cretin in any of the idiotic asylums.

DR. HUBER, in reply to a question, stated that the cretins occurred mostly among the Russian Poles, Germans and Swedes.

THIRD DAY.—MORNING SESSION.

SYPHILITIC BRONCHO-STENOSIS IN CHILDREN,

by DR. A. SEIBERT, New York.

Dr. Seibert reported four cases of this affection which he had observed in the last three years. The patients varied in age from eighteen months to three and a half years; were the children of poor Russian Hebrews who had recently come to this country. Taking the four cases together, the following is a brief sketch of the chief symptoms and course: the disease started in the upper air passages with cough, hoarseness and aphonia. Gradually and slowly signs characteristic of stenosis appeared, to remain for weeks and months, only varying in intensity: muco-purulent expectoration from larynx and trachea; one-sided bronchitis; at last pulmonary infiltration into the tissue adjoining the right bronchus, dulness over the middle

lobe posteriorly, bases free. Chronic course three to eight months; no fever; comparatively good nourishment of patients in spite of long suffering; and at last prompt success by anti-syphilitic treatment.

Laryngoscopic examination showed marked hypertrophic swelling of the mucosa and vocal cords; no ulceration in the larynx; well marked in the oral cavity. It was clear that we had to deal with an affection of the respiratory tract that could simulate laryngeal croup. One child was intubated, and respiration remained the same after intubation. This showed that we had to look for the hindrance to respiration below the larynx. The gradual development of the cases spoke against foreign body as the cause. Tumors pressing on the bronchus could not explain the tracheitis. The general condition of the children was very good, which did not speak for extensive tubercular affection of the larynx, trachea and lung. Further more, fever was absent.

Enlarged tubercular lymph nodes might exist without fever, and might compress a bronchus; but if laryngeal, tracheal and pulmonary changes also existed, then fever and cachexia would be present. Syphilis was the only thing that would account for the clinical picture and for all the pathological processes.

Syphilitic broncho-stenosis in children was of rare occurrence, much rarer than bronchial compression by tubercular nodes.

DR. CAILLÉ, of New York, had seen a number of these cases. In two cases he had found, at autopsy, that the areas of dulness were not inflammatory foci, but aseptic spots. He thought that fumigations with calomel were indicated, in order to obtain both a constitutional and local effect. This treatment should, after a few days, be followed by iodide of potassium.

DR. HENRY JACKSON, of Boston, alluded to two cases he had seen in adults. In one there were cicatrices in the larynx, ulceration and a few small cicatrices in the mouth. There were signs of consolidation in the lungs. There was an annoying hard cough. The diagnosis of tuberculosis was made, syphilis not being considered. At a later period the diagnosis of syphilis was made and the patient rapidly recovered on anti-syphilitic treatment.

The second case presented marked signs of syphilis in surface lesions. He had ulcerated laryngitis. There was stenotic breathing, a small area of consolidation in the middle part of the right lung. The case yielded to specific treatment.

DR. SEIBERT, of New York, called attention to one form of syphilitic stenosis that would not be benefited by anti-syphilitic treatment, namely, where a diminution existed in the circumference of the bronchial tube due to constriction on the part by a cicatrix. In the majority of cases the stenosis was caused by a pathological hypertrophy of the submucosa and mucosa, and was very readily relieved.

Fumigations with calomel might be good, but he was satisfied with the old way of using iodide of potash and mercury. He usually administered the iodide per rectum.

A CASE OF DEATH FROM LARYNGISMUS STRIDULUS IN INCIPIENT RACHITIS,

by DR. SAMUEL S. ADAMS, Washington, D. C.

The case was that of a bottle-fed baby first seen at the age of four months, when it was suffering from an attack of tonsillitis. A week after recovery a severe

attack of grippe came on, which subsided after three days and was followed by bronchitis of the larger bronchi. A few days later broncho-pneumonia developed, which was soon recovered from. About six weeks later, Dr. Adams was called to see the child on account of loss of appetite and sluggish bowels. His attention was called to a peculiar noise the child made as it awoke. This was a sort of whoop with inspiration. Shortly after this, convulsions set in. A consultation was had, and the diagnosis of laryngismus stridulus, due to incipient rachitis, was arrived at. The child died suddenly a few days later, and no autopsy could be obtained. The sutures and fontanelles were normal, but the child was fat and flabby.

DR. BLACKADER, of Montreal, stated that while laryngismus stridulus was a not uncommon accompaniment of incipient rachitis in London and on the Continent, yet in Montreal it was rare, although cases of incipient rachitis were common.

DR. ADAMS, in reply to questions, stated that there was no nystagmus in this case, and no evidence of adenoid vegetations so far as symptoms went. He had not examined for them.

DR. SEIBERT called attention to the possibility of enlargement of the thymus gland being the immediate cause of death in this case. He cited a case in which a baby in perfect health had died almost instantly without any movement from being turned upon the face in the mother's lap. At the autopsy a very large thymus gland was found.

DR. JACOBI, of New York, said that, in his judgment, forty-nine out of fifty cases of laryngismus stridulus were of rachitic origin. There was every reason to look for rachitis in this case. The child had been fed on cow's milk, was a fat child, had not been a well child. Besides this, the child had had a good many convulsions, and there probably was that condition of the brain which results from rachitis. He believed that there was edema of the brain which gave rise first to the laryngismus stridulus, and, secondly, to the constantly repeated convulsions. As to the cause of death he did not think we could state positively. He suggested, as a possible cause, the so-called swallowing of the tongue, also hypertrophy of the thymus gland.

DR. HUBER, of New York, stated that cases of laryngismus stridulus with more or less softening of the occipital and parietal bones and other evidences of advanced rachitis were not uncommon in his service in the Vanderbilt Hospital and in the tenement districts. He had seen four cases in which swallowing of the tongue was the immediate cause of death.

DR. ADAMS, of Washington, stated that he had seen one or two of the convulsions, and that after an inspiratory whoop a decided clonic convolution followed. The cause of death was not clear.

DR. HUBER, of New York, reported

A CASE OF SACRO-COCYGEAL TUMOR IN A CHILD THREE WEEKS OLD; OPERATION; RECOVERY.

DR. A. JACOBI, New York, presented

A NOTE ON PEROXIDE OF HYDROGEN.

Dr. Jacobi called attention to a number of cases he had seen, in which the use of peroxide of hydrogen in diphtheria especially had produced appearances which might be mistaken for the original disease, and which appearances had readily disappeared on withdrawing

the peroxide. The disease had not only not been benefited, but had been prolonged by the use of the drug.

DR. CAILLÉ, of New York, cited a case in which, thirty-six hours after using the peroxide of hydrogen in weak solution as a spray and gargle, a whitish veil appeared in the mouth, and then beginning ulceration and a pseudo-membrane over these ulcerated spots. At the suggestion of Dr. Jacobi the peroxide was stopped, and the patient recovered.

DR. BLACKADER, of Montreal, suggested the possibility that the peroxide contained impurities of an irritating nature, these impurities being the salts and acids used in the production of the peroxide, and which in themselves must be poisonous.

DR. SEIBERT, of New York, had observed the same appearances described by Dr. Caillé as following the use of peroxide. Although peroxide was extensively advertised, he had never seen one scientific article in medical literature showing that it really did kill germs.

DR. BUCKINGHAM, of Boston, had used the fifteen-volume solution of peroxide of hydrogen in a spray in the mouth and nose. He had not been able to trace any bad results. It seemed for a time to lessen the membrane, but the membrane quickly returned. He was uncertain whether it had any benefit as far as the disease went.

DR. KOPLIK, of New York, had observed, in one case where he had used a spray of peroxide, a beefy color to the soft palate followed by a milky pseudo-membranous deposit.

DR. HUBER, of New York, had seen in a number of cases the effects which had been described.

DR. JACOBI, of New York, said the films seen were coagulated albumen, but the damage was done by destroying the epithelium, giving rise to new exudation, new diphtheritic deposits and certainly to more danger and discomfort.

THE RELATION OF RHEUMATISM AND CHOREA,
by DRs. C. W. TOWNSEND, BOSTON; F. M. CRANDALL, NEW YORK; M. ALLEN STARR, and SAMUEL S. ADAMS, WASHINGTON.

The discussion was opened by DR. C. W. TOWNSEND, who read a paper of which the following is an abstract:

Statistics as to the frequency of rheumatism in choreic cases vary very much, owing to the obscure nature of rheumatism in children, and this variation was illustrated by quotations from different writers. The questions to be considered are:

(1) Does rheumatism occur with greater frequency among choreic than non choreic children?

(2) Does rheumatism act simply as a debilitating disease in its relation to chorea, or is there an intimate relation between the two diseases?

(3) Is the heart-murmur often found in chorea, due to endocarditis, and is it liable to lead to serious heart disease?

In answering these questions, the writer considered all the cases of chorea in the out-patient department of the Boston Children's Hospital, 148 in number, from the years 1883 to 1890, a large number of whom had been seen at the hospital or visited at their homes after the original attack of chorea. He found that twenty-one per cent. of these had had rheumatism, and thirty per cent a heart-murmur, half of the latter becoming organic heart disease. That there was an intimate re-

lation between rheumatism and chorea seemed evident from the large proportion of rheumatic cases among the latter. Among non-choreic children he had found only five and one-half per cent. to be rheumatic, or twelve per cent., including the cases of so-called growing pains. Another reason for believing in the intimate relation of the two diseases was that chorea is often followed or accompanied by rheumatism, as well as preceded by it, one sometimes giving place to the other.

The occurrence of endocarditis in chorea without rheumatism was considered a strong argument against the purely neurotic theory, and one that pointed to the infectious nature of chorea.

The conclusions reached were:

(1) Fright, eye-strain, debility and school pressure, particularly the latter, which often include some of the former, are potent exciting causes of chorea.

(2) Rheumatism, although absent from the history of at least half of the choreic cases, occurs with greater frequency among choreic than non-choreic cases.

(3) There is an intimate relation between chorea and rheumatism.

(4) The heart-murmur so frequently found in chorea, sometimes associated with rheumatism and sometimes not, is in a considerable proportion of the cases due to endocarditis, and leads to organic valvular disease.

DR. CRANDALL, of New York, had concluded, after a careful study of his cases of chorea, that there was some underlying cause aside from the fright, rheumatism, etc., that there was some neurotic element underneath all this. Not every person exposed to tuberculosis contracted the disease, and not every person exposed to fright, scolding, rheumatism, etc., had chorea. Rheumatism, however, was the most universal and potent of the exciting causes.

DR. STARR, of New York, presented an analysis of 385 cases of chorea. Of these, 234 were general; 140 were unilateral; 11 extent uncertain. Distinct history of rheumatism in 70 cases. In 281 cases rheumatism denied; in 5 cases pains of doubtful nature were admitted; in 29 cases no record was made of rheumatism. Organic heart disease found in 70 cases; functional murmurs in 56 cases; heart normal in 212 cases; no statement regarding heart in 47 cases. The cases in which rheumatism was noted were cases in which a distinct attack of acute articular rheumatism had occurred. In 340 of the cases a record was made of the history of the parents as regarded rheumatism, nervous diseases and phthisis. In 58 cases one or both parents suffered from rheumatism. In 100 cases one or both parents were said to be "nervous."

DR. S. S. ADAMS regards rheumatism which holds an indirect relation to chorea, as a less important factor in its development than neurasthenia.

DR. JACOBI, of New York, said that a diagnosis of acute rheumatism was not so frequently made in little children as it ought to be, and a good many of the cases in which there was heart disease and not rheumatism had been rheumatic. We found in children of six to twelve years of age a good many fully developed cases of heart disease that must have a cause. Congenital heart disease was rare. All the cases, with rare exceptions, seen in later life were acquired, and the cause of acquired endocarditis was rheumatism. A great many cases were reported in which some pain had existed, but they had not been taken for rheumatism.

Why not? These pains had been rheumatism. The so-called growing pains were one of three things: first, neuralgic pains; second, epiphysis. These cases were not so frequent as to cover all the cases. Third, there was a large number of cases of so-called growing pains which were not growing pains at all, but positive cases of rheumatism. Cases of rheumatism with endocarditis that could not be doubted at all would frequently be found attended with very little pain about the joints, very little swelling and sometimes not very high fever. Sometimes the endocarditis came very early, sometimes late: it was very frequent. He believed rheumatic endocarditis attending even a mild attack of rheumatism was more frequent in children than in adults. He believed that there was very much more articular rheumatism in children than we had generally assumed, and that there were a good many cases of chorea which should be attributed to that.

DR. HOLT, of New York, said if we assumed that only cases with a definite history of acute articular rheumatism were to be regarded as rheumatism, the number of cases would be very much reduced; but it seemed to him that the great proportion of all these cases of endocarditis should be included as rheumatism. He had learned to be very suspicious of cases of functional heart murmur in chorea. In such cases when examined several years later well-developed heart lesions were often found. His own conviction was that the connection between rheumatism and chorea was a very close one. Other factors, of course, were necessary besides rheumatism, but certainly the rheumatic diathesis and the presence of acute rheumatism was a more powerful predisposing factor than any other single one.

DR. FISHER, of New York, had examined the blood of a patient suffering from a second attack of chorea and in whom there was a history of rheumatism. The blood contained peculiar germs resembling the streptococcus seen in a case of rheumatic endocarditis. The germ disappeared after about ten days' use of Fowler's solution.

DR. OSLER, of Baltimore, thought it quite impossible to bring all the cases of chorea into the category of rheumatism. In 554 cases he had studied from German records only fifteen per cent. had a positive history of articular trouble; and, including those with pains of any kind, the percentage was only twenty. Unless we expanded largely our conception of rheumatism in children the large proportion of the cases which had come under his observation in Philadelphia and Baltimore had no definite history of rheumatism, and the absence of the subcutaneous fibrous nodules upon which English writers had laid such stress was striking. The frequency of organic heart disease in the subjects of chorea was remarkable, and the subjects of chorea had usually a definite articular history. In 110 cases from the Infirmary of Nervous Diseases in Philadelphia there were 40 with signs of organic heart disease, and in more than fifty per cent. of these cases there had been no history of rheumatism. There was no other disease with which endocarditis was shown by autopsy to be so frequently associated as with chorea. The nature of the disease and the relationship were still doubtful, but the points brought out had been of considerable interest, and showed a larger percentage of rheumatic cases than had yet been shown in any series in this country, a percentage approaching much more to the English than to the Germans.

THIRD DAY.—AFTERNOON SESSION.

THE VALUE OF MILK LABORATORIES FOR THE ADVANCEMENT OF OUR KNOWLEDGE OF ARTIFICIAL FEEDING,

by DR. T. M. ROTCH, Boston.

DR. BOOKER, of New York, believed that the process presented by Dr. Rotch would supply us with a means of treating cases that could not take milk as ordinarily sterilized, and of treating cases in which the breast milk could not be given. The point at which the milk was sterilized, namely 167° F. was important. Sterilized milk at 212° F. was more difficult of digestion than unsterilized milk.

DR. KOPLIK, of New York, thought this low point of sterilization was very important, since if sterilized at 212° F., some children would not drink it. It tasted boiled, and the cream separated in drops of fat. He had experimented with sterilizing milk at a low point, and had succeeded well.

DR. JACKSON, of Boston, had examined specimens of the milk as delivered to the laboratory and found it contained but a comparatively small number of bacteria. As to whether milk was as fully sterilized at 167° F. as at 212° F., he had made a few experiments and found that about an equal number of bacteria developed in the milk sterilized at 167° F., and at 212° F.

DR. HOLT, of New York, said the sterilization of milk as first introduced had not met the expectations of the profession. He was delighted to find that milk subjected to a temperature of 167° F. was sterile for all practical purposes. Dr. Rotch had given us a method of artificial feeding which exceeded his expectations. He thought the Society and the profession owed him a debt of gratitude for making a start in a direction the full fruits of which we could not see for many years.

DR. BLACKADER, of Montreal, also had come to the conclusion that milk sterilized at 212° F., did not meet our practical wants. He had recently subjected milk to a temperature of not exceeding 180° F. with very good results. The milk was not altered to the same extent as before.

DR. JACOBI, of New York, said the fault was not so much with sterilization at 212° F. as it was in the fact that we expected too much. No sterilization and no handling of cow's milk would make human milk. He believed the principles of feeding laid down before would still hold good. He wished to join in the complimentary remarks as to the method of Dr. Rotch and its merits.

A SIMPLE METHOD FOR CLINICAL EXAMINATION OF BREAST MILK,

by DR. L. EMMETT HOLT, New York.

Dr. Holt showed a simple apparatus he had devised for the clinical examination of breast milk, which consisted of a lactometer and a graduated tube. Milk to be examined was either the entire specimen at a single nursing or a specimen taken as near the middle of the nursing as possible. The specific gravity was first taken; then the milk was put into the graduated tube taken up to the hundred line and allowed to stand for twenty-four hours on the physician's table, at which time the amount of cream which had risen could be read off as hundredths. A good average milk would have a specific gravity of about 1030, with about eight per

[MAY 19, 1892.]

cent. of cream, provided the specific gravity and the percentage of cream did not vary materially from these figures, it might be inferred that the amount of protein was normal. The quantity of milk must be taken into account, just as it is when a chemical analysis is made. For instance, he had seen the cream at fifteen per cent., and yet the children losing. The milk in this case was found to be scanty.

DR. CHARLES HARRINGTON, of Boston, said his experience had led him to the conclusion that the lactoscope, if properly used, was superior to other systems in the determination of the amount of fat in milk. The instruments which depended upon the liberation of the fat were so unreliable as to be in most instances practically of no value. He agreed with Dr. Holt that with a knowledge of the percentage of fat and the specific gravity the percentage of sugar and albuminooids might be determined quite accurately. In trying to get an idea of the amount of fat from the cream volume he had found great difficulty in many cases. In one case where only a thin wafer of cream appeared the milk was found to contain four per cent. He had not used the lactoscope much with breast milk.

After appropriate action relative to the death of DR. JOHN AMORY JEFFRIES, of Boston, the meeting adjourned.

Recent Literature.

Diseases of the Throat, Nose and Ear. A Clinical Manual for Students and Practitioners. By P. McBRIDE, M.D., F.R.C.P. (Ed.) With colored illustrations from original drawings. Philadelphia: P. Blakiston, Son & Co. 1892.

This work of 606 pages is, if we are not mistaken, the first in which the diseases of the throat, nose and ear are discussed in a single volume. It is fortunately not a compilation, but founded chiefly upon the author's own experience, and there is ample evidence throughout its pages that he is an accurate observer and a conscientious practitioner. He has shown great ability as a condenser. The volume, by no means bulky, contains everything of importance in modern laryngology, rhinology, or otology. It is fully up to date. It is a comfort to read page after page without meeting a single drawing of atomizers, compressed air apparatus, or of instruments of any kind. All these have wisely been left out, and much valuable space thereby economized.

Although specialists will find this a highly interesting work, its chief mission will be for students. We can recommend it to them as a thoroughly safe guide. It tells them what they want to know in a clear and reliable manner without wasting their time, as the author has imparted his facts without waste of words. The press-work leaves nothing to be desired.

The Emperor of Austria has conferred the cross of Knighthood of the Order of Leopold, with remission of the customary fees, on Professors Otto Kahler, Moriz Kaposi, and Gustav Braun, of the University of Vienna.

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THE LIVER IN DIABETES.

THOUGH the primary cause of this disease (whether nutritive or nervous) is still involved in obscurity, yet that diabetes is frequently associated with exaggeration of the glycogenic function of the liver is not questioned. More than a hundred years ago, Richard Meade declared diabetes to be a disease of the liver; time has shown what measure of truth there is in his statement. The immediate result of Claude Bernard's discovery of hepatic glycogenesis was to direct research to that organ as the probable seat of diabetes. The results of very many autopsies of diabetic patients have shown a remarkable concomitance between this disease and states of hyperemia, enlargement and hypertrophy of the liver. Out of twenty-seven autopsies at St. George's Hospital, Dickenson found the liver healthy in only six cases; in thirteen it was more or less hyperemic; in three it was hard and enlarged; in four it was fatty, etc. Among thirty diabetics examined after death at the Vienna Hospital, the liver was found enlarged in fifteen, gorged with blood and hardened; it was generally of a dusky brown color, and in some cases its acini were less sharply defined or even obliterated.¹ According to Klebs the congestion of the liver is an active hyperemia; dilatation of the hepatic veins and their roots such as occurs in static hyperemia, is wanting. The hypertrophy is also a peculiarity of diabetes, but the increased volume of the organ depends more on the enlargement of the gland-cells than on augmented quantity of blood. In the further progress of the disease, according to Klebs, the liver again diminishes in size, becomes withered and flabby, and often fatty degeneration takes place.

Hypertrophic sclerosis has several times been noted; Hanot and Chauffard have called attention to the presence of pigmentary granulations in the sclerous tissue (*hypertrophic pigmentary cirrhosis*). If atrophic cirrhosis has been frequently seen, this may be ex-

¹ Senator.

plained by the abuse which diabetics often make of alcohol, when, however, diabetes has lasted a long time, according to Lécorché, the congestive state entails a cirrhosis which terminates the disease.

Glenard, in summing up the results of autopsies as far as known, computes that there exists an objective alteration of the liver in sixty per cent. of cases of diabetes, and hypertrophy is met with in one-quarter of the cases.²

It is by no means agreed that all forms of saccharine diabetes are due to excessive production of sugar by the liver. The gastro-intestinal theory of Bouchardat, according to which the abnormal saccharinity of the blood is due to direct absorption of sugar from the alimentary canal, has not yet been wholly set aside, and doubtless serves to explain some cases. Bouchardat supposed the cause of the diabetes to be mal-elaboration of the carbo-hydrates owing to some digestive derangement. Other and later writers have hypothesized a failure of the liver to fix sugar and store it up for time of need. However this may be, Andral's famous case, in which mellitaria had existed with complete obliteration of the portal vein, proves the possibility of an abnormal quantity of sugar entering the blood and constituting a glycosuria independently of any action of the liver; and Wickham Legg has shown that ligation of the choledochus duct produces in the cells of the liver alterations which oppose the formation of glycogen, preventing even the production of glycosuria after puncture of the fourth ventricle; what is especially noteworthy in this experiment is that the injury above stated does not prevent glycosuria from supervening when an excess of sugar or starch is ingested.

The old writers paid much more attention than modern writers to the gastro-intestinal derangements which often precede and accompany diabetes, and get good results from a therapy and a dietetic hygiene based on data thus obtained; and this, long before any thing was known respecting the agency of the liver in glycogenesis.

That there is a very grave form of diabetes dependent on destructive lesions of the pancreas, is now being generally admitted, and without entering into any explanation of the relation of the pancreas to hyperglycemia (which is confessedly little understood), it is certain that in pancreatic diabetes hepatic alterations do not play the principal rôle. Experimentally, diabetes has been produced in animals by extirpation of the pancreas; the diabetes so obtained persists; in frogs the result is the same even after ablation of the liver (Le Gendre).

There is a very popular theory of diabetes which leaves the liver hardly any rôle in the pathogenesis—that of Bouchard. According to this, in diabetes there is a normal formation of sugar by the liver; insufficient utilization of sugar by the tissues; accumulation of sugar in the blood; accumulation of water in the blood by reason of the sugar which demands water

for diffusion and borrows it of the tissues and fluids; augmentation by this fact of the total mass of the blood; consecutive hyper-activity of the renal secretion, whence polyuria which removes the sugar and moderates the hyper-glycæmia.³

In a recent able survey of the whole subject, Dujardin-Beaumetz⁴ maintains that in diabetic patients the functions of the liver are in the main normal and physiological, perhaps even exaggerated, and he affirms that in the numerous cases of hepatic disease which he has examined, he has never seen even a temporary glycosuria appear in the course of the hepatic affection. He further contends that in the diabetic the intercurrent affections of the liver (cancer, cirrhosis, amyloid degeneration, etc.), tend to cause the sugar to disappear from the urine.

To conclude: doubtless the hyperæmia and other alterations of the liver noticed by Glenard, Dickenson and others in diabetes and referred to above, may be regarded as accompaniments or consequences of the disease rather than in any true sense the cause. True diabetes has never yet been produced by agents influencing primarily the liver.

SEX IN EDUCATION.

SIR JAMES CRICHTON BROWNE has been delivering an address before the Medical Society of London on the above subject.¹ Sir James's former investigations as to the relation of school work to headaches is still in memory. He dreads forcing in education, and fears for the immediate and prospective results of over-pressure in the English high-school system upon English girlhood, motherhood and future generations.

As the result of his own examination of a great number of brains—leaving aside other and grosser physical differences—and the examinations of others, he concludes that all available evidence points to the conclusion that the male brain exceeds the female brain in weight in his country to an even greater degree than has been hitherto supposed. That the smaller size of the female brain is a fundamental sexual distinction, and is not to be accounted for by the hypothesis that environment, educational advantages, and habits of life, acting through a long series of generations, have stimulated the growth of the cerebrum in one sex more than in the other, is made clear by the fact that the same differences in brain weight between men and women has been found in savage races. And not only is the male brain heavier than that of the female, but it has a wider range of variation in weight. The very big brains and the very small brains are encountered, just as are geniuses and idiots, giants and dwarfs, more frequently amongst men than amongst women.

Again, he finds that there is a distinctly different

¹ Lancet and British Medical Journal, May 7, 1892.

² Bouchard : *Maladies par ralentissement de la nutrition.* Chap. VII.

³ Bull. gén. de Ther., January 15, 1892.

⁴ Labadie Lagrave : *Maladies du Foie*, 1892.

distribution of brain substance in man and woman, and this he regards as the second sexual brain distinction. The frontal lobes are equally developed in both sexes; the parietal lobes, corresponding roughly with the motor area of Ferrier, are larger in the male than in the female; the occipital lobes, sensory in their functions, are larger in the female than in the male.

The third brain difference between the sexes is in the convolutional arrangement. The female brain is more symmetrical than the male, due, probably, to its comparative poverty in secondary gyri. There are, moreover, observations indicating that the gray matter of the male brain has a greater specific gravity than that of the female brain.

Still another brain difference is in the vascular supply, and vascular supply is in some degree a measure of functional activity, the flow of blood to an organ or part having always a relation to its working power. But the region of the brain which in men is most richly flushed with blood is that which is concerned, we have reason to believe, in volition, cognitions, and ideo-motor processes; while the region which in women is most vascular is that which is mainly concerned in sensory functions, and we thus see that there is a relation between the size of the cerebral arteries, and what observation has taught us as to the intellectual and emotional differences of the sexes.

Sir James finds that all through life the male brain differs from the female in capacities, aptitudes and powers. These differences assert themselves early, and are found among barbarous and civilized peoples alike, and they have a special pathological significance at the period when sexual divergence is taking place most rapidly, and when education is being pushed forward with most vigor.

This address expresses no uncertain opinions in regard to the dangerous tendencies of the modern "higher education" of women, but it is nowhere temperate. Few will probably refuse their consent to the statement that education from first to last can only be safely conducted in the light of cerebral physiology. He who unveils that light and holds it up where it must be seen is, at the present time, a benefactor.

SEVENTY-EIGHTH ANNUAL REPORT OF THE MASSACHUSETTS GENERAL HOSPITAL AND MCLEAN ASYLUM.

FROM the report of the Resident Physician of the Hospital we learn that 3,203 patients were admitted during the calendar year, of whom 1,171 were Medical and 2,032 were Surgical; 1,881 were males, and 1,322 were females; 637 paid board in whole or in part; and 2,566 were entirely free.

The proportion of deaths to whole number of results was 8.40 per cent. The number of patients received on account of accidents was 595. The average number of free patients was 186; Americans 94, foreigners 92. The average time of paying patients was 2.66 weeks, of free patients 3.76. The proportion of ward beds occupied by free patients was 81 per cent, by

paying patients, 19 per cent. The average cost per week per patient in the Hospital was \$12.54.

The total attendance of out-patients was 48,032, of whom 25,819 were new cases; the average daily attendance was 163. The out-patient quarters were enlarged by the addition of another story. The Convalescent Home has sheltered 386 patients. Donations and legacies to the amount of \$36,662.32 were received during the year.

At the McLean Asylum, there were 184 patients—88 males and 96 females—at the beginning of the year; 116 persons were admitted during the year, of whom 64 were regarded as recent cases and 52 as chronic or incurable. The average cost per week per patient was \$16.81.

Eighty-nine persons, thirty-nine men and fifty women, had never been in any hospital. Of the remaining twenty-seven persons, seventeen, four men and thirteen women, were admitted for the second time; seven persons, six men and one woman, for the third time; three persons, one man and two women, for the fourth time; and one man for the twenty-seventh, twenty-eighth and twenty-ninth times.

Of the one hundred and twenty-four persons discharged, including deaths, eighteen, six men and twelve women, were transferred or committed to other hospitals in this State, and two men and one woman to hospitals in other States.

Of the thirty-three persons discharged recovered, twenty had never before been inmates of any hospital; and of the remaining thirteen persons, ten had been in this Asylum, one in a private asylum in this State, and two in State asylums. These thirteen persons had previously made fifteen recoveries.

The average duration of illness from the beginning of attack in all cases recovered was 12.35 months, and the average duration of their residence in the Asylum was 6.58 months. The percentage of recoveries on all admissions, of persons accounted as insane, for the year 1891, was 28.45.

The voluntary cases admitted during the year numbered forty. These represented thirty-nine persons—ten men and twenty-nine women. Of these, twenty-seven were cases of melancholia, three of mania, three of delusional insanity, one of secondary dementia, two of paralytic, one of epileptic insanity, and two of general paralysis. Of these thirty-nine persons, four were committed after entering the Asylum as voluntary cases, and one was twice admitted as a voluntary case. The voluntary patients have yielded 28.2 per cent. of recoveries on the admissions of that class for 1891, thus furnishing only their due proportion of all the recoveries.

The number of persons admitted as voluntary patients under the present law is as follows: namely, 1881, 1; 1882, 11; 1883, 33; 1884, 49; 1885, 34; 1886, 29; 1887, 29; 1888, 34; 1889, 41; 1890, 58; 1891, 40;—a total of 359 persons in eleven years.

The Superintendent, Dr Cowles, comments upon these results as follows:

"There is much significance in the fact that nearly three-fourths of the voluntary patients in the last year were cases of melancholia. This presents the least serious degree of mental disorder; there is retention of intelligence that leads to the seeking or acceptance of remedial conditions in hospital care, and the doubtful cases, for whom preventive aid is most salutary, are mainly to be found in this stage of mental disease. The voluntary cases constituted almost exactly one-third of the admissions for the year, while nearly one-half in the previous year were voluntary.

"A number of interesting facts are brought out by these results of the year's work, that help to explain each other. There were not so many strictly recent cases as in 1890,—the average duration of illness of recovered cases was 12.33 months against an average of 8.31 months in the previous year,—the average hospital residence of these cases was one month longer, and the proportion of recoveries to the cases admitted was less. Consistent with these results is the lessening in number of voluntary cases, and evidence of the general fact is shown, that the wards were filled with sicker people than in the year before, who were the subjects of active hospital care."

The work of the laboratory for pathological and experimental investigations has been pursued steadily during the year. The training-school for nurses continues in efficient operation.

MEDICAL NOTES.

CHOLERA.—It is reported that cholera is now epidemic in Asiatic Russia, and a special commission has been appointed by Russia to inquire into it. It is also epidemic in the interior of Arabia, and fears have been expressed, that Europe may be invaded during the coming summer. A groundless rumor that cases had occurred in Paris caused some excitement there.

NOTORIETY NOT ALWAYS DESIRABLE.—A notorious quack in Nebraska, who advertised that he had cured twenty-five cases of diphtheria, was recently arrested by the local Board of Health for not having reported the cases.

NEW ENGLAND.

MORTALITY FOR APRIL IN BOSTON.—For the month of April the death-rate was 24.51. The total number of deaths was 938, as against 913 during the corresponding month in 1891. The principal causes of death were: Consumption, 135; bronchitis, 51; heart disease, 90; pneumonia, 102; diphtheria, 52. There were 339 cases of scarlet fever reported with twenty-five deaths.

THE CARNEY HOSPITAL APPROPRIATION.—The question of giving the Carney Hospital \$10,000 came up for a third reading in the Massachusetts House of Representatives on Tuesday. The previous favorable vote was reversed, and the bill was defeated by 106 nays to 99 yeas.

CATALOGUE OF THE HARVARD MEDICAL SCHOOL ASSOCIATION.—This Association has recently issued its second bulletin, in which the names and residences of all its members appear. The total number of members is 1011, of whom 13 are honorary; 348 are residents of Boston, 357 of other cities and towns in Massachusetts. Almost every State is represented and a few foreign countries.

MEDICAL EXAMINERS.—The Governor of Massachusetts has reappointed Zabdiel B. Adams, of Framingham, to be medical examiner for Middlesex County, and Thomas J. Walker, of Edgartown, for Dukes County. He has also appointed John S. Grouard, of Nantucket, for Nantucket County.

A MAD DOG IN LYNN.—A dog supposed to be mad caused a great deal of excitement in Lynn last Saturday. A large number of people were in the streets, waiting for the finish of a bicycle race, when a fine fox-hound was seen running about and snapping at other dogs. A cry of mad dog was raised, and the authorities summoned. The deputy marshal approached the dog with a revolver, but failed to hit him. The dog jumped at him and bit him severely. He then started to run, biting everybody in his way, followed by a patrol-wagon and a buggy containing the town authorities. He was finally caught and shot, but not until nine persons and about forty dogs had been bitten. The brain and spinal cord were sent to the Harvard Medical School for examination, and the dogs which were bitten have been condemned to be shot. The police of Lynn have been so active since this event, that the canine race will probably soon be exterminated in that city.

NEW YORK.

MORTALITY FOR THE WEEK.—The deaths reported during the week ending May 7th numbered 1,002, which is an increase of 52 over the mortality of the preceding week, and 123 above the average mortality of the corresponding week during the past five years. There were four deaths from typhus fever, which is the largest mortality from this disease since the week ending March 19th. There was a considerable increase in the deaths from measles, scarlet fever and diphtheria, the mortality from all of which was in excess of the average number of deaths reported from these diseases during the corresponding week for the past five years.

DEATHS IN 1892.—Dr. John T. Nagle, Registrar of Records, has submitted to the President of the Board of Health a comparative table showing that the deaths from January 1st to May 11th numbered 17,061, as against 16,715 for the corresponding period last year. This is an increase of only 346, and shows a decided reduction in the death-rate when the increase in the population is taken into consideration. During the same period 17,978 births were reported, as against 15,139 for the corresponding period last year, or an increase of 2,839.

BEQUESTS IN THE ASTOR WILL.—The late William Astor left very little in his will for charities. The only medical institutions mentioned were the following: The Woman's Hospital and the Home for Incurables, New York, each of which receives \$10,000, and St. Luke's Hospital, Jacksonville, Florida, which receives \$15,000.

BELLEVUE MEDICAL COLLEGE.—Dr. E. G. Jane-way has resigned his position as Professor of Practice of Medicine in Bellevue Hospital Medical College, and Dr. A. A. Smith has been appointed to the Chair. Dr. Herman M. Biggs is to take the place of Dr. Smith as Professor of *Materia Medica* and *Therapeutics*.

Miscellany.

MICRO-ORGANISMS IN THE SALIVA.

SANARELLI¹ has studied the cause of the fact that although many specific micro-organisms, such as the pneumococcus, the bacillus of diphtheria and the like are often found in human saliva, they seem seldom to cause infection, even after wounds of the mouth. He studied the action of saliva upon these bacteria as well as upon the typhoid and cholera bacilli, and comes to the following conclusions:

Human saliva is an unfavorable culture medium for certain pathogenic micro-organisms. It possesses the power of either destroying them or hindering their growth, so that the number remaining is not sufficient to cause infection. That bacillus of diphtheria and the coccus of pneumonia can live in saliva for some time. The first of these does not grow in it and finally dies, the latter although it does grow soon loses its virulence.

A REMARKABLE ANUS.

At the recent meeting of the French Surgical Congress in Paris a man was exhibited who for some time has been earning a livelihood by playing musical airs with his anus in various places of public amusement. A history of this case, and a study of his methods appears in a recent issue of the *Semaine Médicale*, by Dr. Baudouin. While still a boy this person noticed that when bathing he could by deep inspiration, draw water into his bowel. His friends encouraged him to cultivate his talent, which he did so conscientiously that before many years he could not only draw up large quantities of water, and expel it again with great force, but he also became able to draw in air. By alternately drawing in and expelling air through the anus, he imitated a number of musical instruments; a trombone, violin and a bass voice. He is able to play different tunes, so that they may be readily recognized. Physical examination reveals nothing abnormal. The aspiration is caused by a remarkable voluntary control of the lower bowel and anus, combined with the power to create a negative tension in the abdomen by well-trained muscular action. The different tones are produced mostly by an artistic expulsion of the air through the anus aided by movements of the buttocks. The lower bowel is so well

under his command that he can entirely empty it at pleasure, thus avoiding any disagreeable odor during his performances.

THE REMOVAL OF LEAD FROM THE EAR.

An unusual accident and an ingenious method of relieving it are reported by Dr. Sheild, in the *Lancet* of April 30th. A man while carrying a pot of molten lead down a ladder, fell, some of the material running down the right ear, and on cooling, filling the middle ear with solid lead plug. After the acute inflammation had passed off, the author laid the patient upon his side and poured liquid mercury into the meatus. This was repeated until the patient had lain in the aggregate sixteen hours with mercury in the ear. At the end of this time enough of the lead had been reduced to an amalgam to allow its removal by injecting a stream of water from a syringe. It is suggested that this treatment might be serviceable in cases of impaction of leaden bullets.

OBITUARY. DR. JOSEPH DRAPER.

At the annual meeting of the Connecticut River Valley Medical Association it was voted that the following obituary be sent to the *Boston Medical and Surgical Journal*:

Dr. Joseph Draper was born in Warwick, Mass., February 15, 1834. His early years were spent on a farm, which was very distasteful to him. He commenced the study of his profession with Dr. James Deane, of Greenfield, Mass., afterwards attending lectures in New York, and graduating from Jefferson Medical College in 1858. In October, 1859, he was appointed assistant to Dr. Rockwell, in Brattleboro Asylum, and remained until 1865. He was afterwards assistant and some of the time acting superintendent at the Insane Asylum in Worcester, Mass. In 1870 he was appointed assistant in the New Jersey Insane Asylum, and remained until 1873, when he returned to Brattleboro; and the growth of this institution is attributable to his zeal.

In 1881 he was given three months' leave of absence by the trustees to study abroad, and in this time he visited many of the institutions of England and Scotland, and learned much from them for the benefit of the Brattleboro Asylum. He was an active member of the State and County Medical Societies, of the Association of Medical Superintendents of American Institutions for the Insane, President of the Psychological Society, a member of the Massachusetts Medical Society, and of the Medico-Legal Society. His contributions to the literature of his profession were very numerous. Among his publications may be mentioned: "Annals of Vermont Asylum for the Insane," covering a period of fifty years of its history; "Sketch of Dr. James Deane," 1858; "Sketch of Dr. W. H. Rockwell," 1858; "Sketch of Dr. C. H. Tenney," 1874; "The Pathology of Insanity," 1875; "The Pathogenesis of Insanity," 1877; "Hysteria in Insanity," 1879; "Neurasthenia of the Ganglion Nervous Centres," 1881; "Insanity in Great Britain and the Continent of Europe," 1882; "The Responsibility of the Insane Outside of Asylums," 1883; "Vermont Asylum in the History of Brattleboro," 1880; "Insanity in Vermont, 1835-1885," 1885; "Obituary of Dr. Sumner Putnam," 1888; "The Oath of Hippocrates," 1889; "Nervous Exhaustion," 1890; "Subjective Delusions," 1890.

Dr. Draper was a prominent member of the Professional Club at Brattleboro, and has lectured before them and in other towns. He was married at Warwick, Mass., to M. J. Putnam in January, 1863, who still survives him.

¹ Centralbl. f. Bakteriol., x, 25.

THERAPEUTIC NOTES.

EUROPHEN AS A SUBSTITUTE FOR IODOFORM. — Peterson,¹ after trying a large number of the substances which have been recommended as substitutes for iodofrom, among them iodol, sozoiodol, aristol and dermatol, with unsatisfactory results, has finally found in europhen a good substitute. He uses it in the same way in which iodofrom is used, and for the same cases, and obtains excellent results.

A NEW STYPTIC. — Wright² makes a solution of fibrin ferment by treating a decolorized clot from ox blood with alcohol and extracting with water. To this is added a one per cent. solution of chloride of lime. This he has found to be not only an active styptic when applied locally, but to promote coagulation when given internally.

Correspondence.

THE PHYSICAL EXAMINATION OF STATE TROOPS. A CORRECTION.

BOSTON, May 14, 1892.

ME. EDITOR: — I beg to make a correction in my paper issued in the *Boston Medical and Surgical Journal*, May 12, 1892, "Is it Expedient to have a Physical Examination of Men before Enlisting them in State Troops?" On page 469 the statement is made, "but there has been no movement in the medical department towards an examination of enlistments." This I find, while literally true, should be modified, as it does not present the whole truth. Assistant Surgeon, C. M. Green, First Corps Cadets, M. V. M., has courteously called my attention to this misstatement, or unqualified statement. The spirit of what I intended to convey was that no movement in the medical department had been made, as a department, towards an examination of enlistments.

The facts, as presented to me by Assistant Surgeon Green, in an extract from General Orders, No. 15, from the headquarters of the First Corps Cadets, M. V. M., dated August 4, 1887, are as follows:

"Every candidate for admission to the Corps hereafter must be examined by one of its medical officers, who will, if the candidate is physically qualified to perform the duties of a soldier, give him a certificate to that effect, which certificate will be forwarded to the Committee on Elections with the application to enlist. The Committee will not present to the Corps the name of a candidate lacking such a certificate. By order."

This is the form of the medical officers' certificate:

"I certify that —— has been examined, and is physically qualified to perform the duties of a soldier in the Massachusetts Volunteer Militia. ——, Surgeon."

Assistant Surgeon Green has forwarded to me a bound copy entitled, "Standing Orders, First Corps Cadets, Massachusetts Volunteer Militia, 1890." Various marked passages in these "Standing Orders" embody the examination of enlistments.

This correction is important, as the above facts accord to the First Corps of Cadets, as an organization, the credit and honor of being the pioneers in this State in the physical examination of recruits before enlistment. I am very glad to say that in the discussion following the reading of this paper at St. Louis I did the First Corps of Cadets the justice of alluding to their requirement of a physical examination of men before enlistment.

Very respectfully yours,

HERBERT L. BURKELL,
Lieutenant-Colonel and Medical Director,
First Brigade, M. V. M.

METEOROLOGICAL RECORD.

For the week ending May 7, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:

Date.	Barometer.		Thermometer.		Relative humidity.		Direction of wind.	Velocity of wind.	Weather.	Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	Daily mean.	8.60 A. M.	8.60 P. M.	8.60 A. M.	8.60 P. M.	8.60 A. M.
S. — 1	30.58	47.98	39.37	37.86	62	W.	S.W.	3	O.	.98
M. — 2	30.59	47.98	39.37	37.86	62	N.E.	N.E.	10	O.	.22
T. — 3	30.15	44.47	42.96	36.96	62	N.E.	N.E.	13	O.	.22
W. — 4	30.70	59.74	41.93	35.66	62	S.W.	S.W.	15	O.	.40
T. — 5	30.18	55.66	50.45	34.34	54	N.W.	N.W.	17	O.	.00
F. — 6	29.91	53.63	51.51	51.52	52	N.	N.	19	S.	0.00
S. — 7	29.82	53.60	46.32	51.42	52	W.	N.W.	14	C.	0.00
EF		36.02	53	62	45	64	65	62		.12
* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoke; R, rain; T, threat. enning; N, snow. + Indicates trace of rainfall. — Mean for week.										

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoke; R, rain; T, threat.
enning; N, snow. + Indicates trace of rainfall. — Mean for week.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, MAY 7, 1892.

Cities.	Estimated population for 1890.	Reported deaths.	Deaths under five years.	Percentage of deaths from		
				Infectious diseases.	Acute lung diseases.	Scarlet fever.
New York .	1,515,361	1062	410	21.10	24.90	4.60
Chicago .	1,069,850	484	213	10.50	18.27	4.71
Philadelphia .	1,048,000	426	186	13.40	24.24	1.10
Brooklyn .	366,343	233	135	13.25	19.59	5.54
St. Louis .	451,710	166	101	14.40	10.80	2.40
Boston .	448,477	226	66	7.04	18.92	2.20
Baltimore .	434,439	—	—	—	—	—
Charleston .	292,900	92	33	15.26	23.67	1.09
Cleveland .	262,000	92	33	15.26	23.67	2.38
New Orleans .	242,039	—	—	—	—	6.54
Pittsburgh .	240,000	111	36	5.40	19.80	—
Milwaukee .	240,000	78	33	17.92	14.98	2.56
Washington .	230,392	84	34	6.27	12.50	3.58
Albany .	218,484	55	5	11.44	2.86	—
Portland .	63,163	19	5	—	26.30	—
Portland .	36,425	19	5	—	26.30	—
Westerly .	35,425	35	7	5.72	11.16	—
Lowell .	77,696	44	15	18.16	9.08	—
Galliville .	22,988	33	8	3.03	12.12	3.03
Cambridge .	76,928	14	5	35.71	14.28	—
Lynn .	55,727	28	10	10.71	17.85	7.14
Lawrence .	44,654	18	6	33.33	5.53	5.53
Springfield .	44,179	18	8	43.60	12.50	—
Wellesley .	40,923	16	8	50.00	12.50	—
Salem .	30,861	9	3	33.33	—	—
Chester .	27,969	14	—	7.14	—	—
Haverhill .	27,412	16	—	10.00	10.00	—
Fauntleroy .	25,445	11	—	9.09	36.36	—
Gloucester .	24,151	5	1	20.00	—	—
Newton .	34,579	—	—	—	—	—
Malden .	23,063	9	—	11.11	11.11	—
Waltham .	18,707	8	—	12.50	12.50	—
Bethel .	22,057	8	—	12.50	12.50	—
Quincy .	17,273	5	2	40.00	—	40.00
Northampton .	14,966	1	0	—	—	—
Newburyport .	13,947	1	0	—	—	—
Medford .	11,079	2	0	—	—	—
Hyde Park .	10,193	2	0	—	—	—
Peabody .	10,358	2	0	—	—	—

Deaths reported 3,459: under five years of age 1,311; principal infectious disease (small-pox, measles, diphtheria, croup, diarrhoeal disease, whooping-cough, erysipelas and fever) 488; acute lung disease (pneumonia, consumption 405, diphtheria and croup 170, scarlet fever 96, measles 89, diarrhoeal diseases 51, typhoid fever 46, whooping-cough 21, cerebro-spinal meningitis 20, erysipelas 16, malarial fever 4, typhus fever 4, small-pox 1).

From diarrhoeal diseases New York 21, St. Louis 9, Lowell 5, Brooklyn 4, Philadelphia 3, Chicago, Milwaukee and Nashville 2 each, Boston, Washington and New Bedford 1 each. From typhoid fever Chicago and Philadelphia 8 each, New York 7, St. Louis, Cleveland and Pittsburgh 4 each, Nashville and Lowell 2 each, Brooklyn, Boston, Milwaukee, Washington, Lawrence, Springfield and Waltham 1 each. From whooping-cough New York 10, Chicago and Philadelphia 3 each, Brooklyn

¹ St. Petersburg Med. Woch., April 4th.

² British Medical Journal.

2. Boston, Milwaukee and Pittsburgh 1 each. From cerebro-spinal meningitis New York 7, Philadelphia 3, Chicago and Brooklyn 2 each, Cleveland, Washington, Worcester, Taunton, Gloucester and Quincy 1 each. From erysipelas New York 6, Chicago 3, Philadelphia and Brooklyn 2 each. St. Louis, Milwaukee and Lowell 1 each. From malarial fever Brooklyn 3, New York 1. From typhus fever New York 4. From small-pox New York 1.

In the twenty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending April 30th, the death-rate was 20.8. Deaths reported 4,057; acute diseases of the respiratory organs (London) 305; measles 342; whooping-cough 154; scarlet fever 41; diarrhoea 36; diphtheria 33; small-pox (London 2, Liverpool 1) 3.

The death-rates ranged from 9.9 in Brighton to 27.5 in Liverpool; Birmingham 24.9, Bradford 22.1, Croydon 10.8, Hull 18.3, Leeds 22.9, Leicester 23.5, London 19.8, Manchester 26.3, Newcastle-on-Tyne 18.4, Nottingham 15.5, Oldham 19.4, Portsmouth 11.8, Sheffield 22.1, Sunderland 24.3, Wolverhampton 21.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 7, 1892, TO MAY 13, 1892.

Leave of absence for six months, on surgeon's certificate of disability, with permission to leave the Department of Texas, is granted COLONEL JOSEPH C. BAILY, surgeon, U. S. A.

FIRST-LIEUT. WILLIAM E. PURCHASE, assistant surgeon, U. S. A., is relieved from duty at Fort Riley, Kansas, and will report in person to the commanding officer, Jefferson Barracks, Mo., for duty at that post.

FIRST-LIEUT. FRANCIS A. WINTER, assistant surgeon, U. S. A., is relieved from duty at Jefferson Barracks, Mo., and will report in person to the commanding officer, Fort Riley, Kansas, for duty at that post.

MAJOR DAVID L. HUNTINGTON, surgeon, U. S. A., is relieved from duty in New York City, to take effect on the final adjournment of the Army Medical Board, and will then proceed to Los Angeles, Cal., and report in person to the Commanding General, Department of Arizona, for duty as medical director of that department, relieving COLONEL JOSEPH R. SMITH, surgeon. Colonel Smith, on being relieved by Major Huntington, will proceed to San Francisco, Cal., and report in person to Commanding General of California, for duty as medical director of that department.

FIRST-LIEUT. WILLIAM F. LIPPITT, JR., assistant surgeon, U. S. A., upon being relieved from duty at Fort McPherson, Ga., will report in person to the commanding officer, Camp Eagle Pass, Texas, for duty at that post, relieving FIRST-LIEUT. OGDEN RAFFERTY, assistant surgeon, U. S. A. First-Lieut. Ogden Rafferty, on being relieved by First-Lieut. Lippitt, Jr., will report in person to the commanding officer, Alcatraz Island, Cal., for duty at that post.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 14, 1892.

H. J. BROWN and M. C. DRENNAN, surgeons, ordered to Naval Academy to examine the physical condition of candidates for admission to Naval Academy.

CLEMENT BIDDLE, passed assistant surgeon, ordered to Marine Rendezvous, Philadelphia, Pa.

H. C. ECKSTEIN, surgeon, detached from Marine Rendezvous, Philadelphia, Pa., and wait orders.

HOWARD WELLS, surgeon, ordered to the training-ship "Portsmouth."

JAMES STOUTHORN, assistant surgeon, from the "Portsmouth" and to the "Constellation."

E. H. MARSTELLER, passed assistant surgeon, from Naval Academy and to "Constellation."

JAMES G. FIELD, assistant surgeon, granted one year's sick leave.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING MAY 7, 1892.

BAILLACHE, P. H., surgeon. Detailed as chairman of Board for physical examination of candidates for promotion and appointment, Revenue Marine Service. April 26 and May 3, 1892.

MEAD, F. W., surgeon. Detailed as chairman of Board for physical examination of candidates for appointment, Revenue Marine Service. May 5, 1892.

KALLOCH, P. C., passed assistant surgeon. To proceed to Providence, R. I., on special duty. April 29, 1892.

KINYOUN, J. J., passed assistant surgeon. Detailed as recorder of Board for physical examination of candidates for appointment, Revenue Marine Service. May 5, 1892.

STONER, J. B., assistant surgeon. Ordered to examination for promotion. April 20, 1892.

DECKER, C. E., assistant surgeon. Detailed as recorder of Boards for physical examination of candidates for promotion and appointment, Revenue Marine Service. April 26 and May 3, 1892.

GARDNER, C. H., assistant surgeon. To report to commanding officer, Revenue Steamer "Kush" for duty. April 18, 1892.

PROMOTION.

WHEELER, W. A., surgeon. Commissioned as surgeon by the President. April 20, 1892.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held on Monday, May 23, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P.M.

DR. W. M. CONANT: "Two Cases of Hernia: I, Right Inguinal Hernia, Incarcerated and Strangulated, Operation; II, Right Inguinal Hernia in a Woman, Radical Cure."

DR. J. HOMANS: "A Case of Spinal Disease."

G. G. SEARS, M.D., *Secretary.*

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.—The second annual meeting of the American Electro-Therapeutic Association will be held in New York, October 4, 5 and 6, 1892, at the New York Academy of Medicine, 17 West 43d Street.

W. J. MORTON, M.D., *President.*

H. R. BIGELOW, M.D., *Secretary.*

APPOINTMENT.

MR. GREENLEAF R. TUCKER, S. B., who has been for the past two years Assistant Professor of Chemistry at the Massachusetts College of Pharmacy was elected on May 2, 1892, to the Professorship of the Department of General Chemistry.

RECENT DEATHS.

PLINY EARL, M.D., M.M.S.S., died in Northampton, May 17th, aged eighty-three years. He graduated from the University of Pennsylvania in 1837, and soon became widely known as an authority in mental disease. In 1864 he became superintendent of the State Hospital for the Insane in Northampton, and remained in that position until 1885. He was a member of many societies both in this country and abroad, and was the author of several monographs on insane hospitals and mental disease.

LORENZO W. ELDER, M.D., died in Hoboken, May 11th, aged seventy-two years. He had been Brigade-surgeon of the State Militia and Mayor of the City, and it was largely through his efforts that the County Board of Health was established.

BOOKS AND PAMPHLETS RECEIVED.

Errors in Ventilation. By William Henry Thayer, M.D., Brooklyn, N.Y.

Transactions of the American Orthopedic Association. Vol. IV. Philadelphia. 1892.

First Decennial Catalogue of the College of Physicians and Surgeons, of Chicago, 1881-91.

Twentieth Annual Report of the Health Department of the City of Boston for the year 1891.

The International Medical Annual and Practitioner's Index for 1892. Edited by P. W. Williams, M.D. New York: E. B. Treat. 1893.

Report of the Commissioner of Education for the year 1888-89. Two volumes. Washington: Government Printing Office. 1891.

Diseases of the Nervous System. By Jerome K. Banduy, M.D., LL.D. Second edition. Philadelphia: J. B. Lippincott Company. 1892.

A Text-book of the Practice of Medicine for the Use of Students and Practitioners. By R. C. M. Page, M.D. New York: Wm. Wood & Co. 1892.

A Text-book of the Eruptive and Contained Fevers. By John William Moore, B.A., M.D., M.Ch., Univ., Dublin. New York: Wm. Wood & Co. 1892.

Rupture of the Sac of an Extra-Uterine Pregnancy through the Fibromat Extremity without Tearing the Fallopian Tube; Operation, Recovery. By Hunter Robb, M.D., Baltimore, Md. Reprint. 1892.

Lecture.

NEW OUTLOOKS IN THE PROPHYLAXIS AND TREATMENT OF TUBERCULOSIS.

THE MIDDLETON-GOLDSMITH LECTURE FOR 1892.

BY FRANCIS P. KINNICUTT, M.D.,
Physician to St. Luke's Hospital and the Presbyterian Hospital,
New York.

(Concluded from No. 20, page 491.)

TREATMENT OF PULMONARY AND LARYNGEAL TUBERCULOSIS BY THE CANTHARIDATES.

In February, 1891, Professor Liebreich, in a paper read before the Berlin Medical Society, announced that he had discovered a new remedy for the treatment of tuberculous disease.

The property of cantharidin, when taken internally, of producing an exudation of serum from the capillaries, not only of the kidneys, but also of the lungs and other organs, unattended with increased arterial tension, hyperemia or extravasation of blood, when used in sufficiently small doses, forms the basis of his theory.

The irritability of the capillaries, according to Liebreich, varies in different parts of the organism in health; in an abnormal state, such as may be assumed to be their condition at the site of local disease, this irritability is increased. By furthering such irritability by the use of the cantharidates, an exudation of serum occurs which may favorably affect tuberculous tissue in two ways: First, by stimulating cell-activity and nutrition; second, through the germicidal action of the serum upon the bacteria.

His experimental investigations apparently indicate in a measure the correctness of his theory. The remedial effects which have followed the use of the cantharid preparations, while occasionally striking, especially in the case of laryngeal tuberculosis, fall short of securing for them, it seems to me, a permanent place in the therapeutics of tuberculosis.

Their apparent action is in harmony with one of the possible means of a remedial treatment of tuberculosis. Cell-activity is stimulated and specifically diseased tissues are subjected to the germicidal action of the blood-serum artificially increased at the site of the disease. There is a failure possibly in the degree rather than in the kind of action. The preparations at present employed are the potassium and sodium cantharidates. They are administered hypodermatically at intervals of forty-eight hours or longer, and in doses of $\frac{1}{40}$ to $\frac{1}{50}$ of grain. The latter strength not infrequently caused symptoms of vesical and renal distress. Their use is contra-indicated in the presence of intestinal and renal disease, and in patients with marked hectic.

TREATMENT WITH THE SERUM OF DOG'S BLOOD.

The interesting experimental investigations of Richez and Hericourt, announced during the past year to the French Academy of Sciences,²⁰ with the serum of dog's blood in the treatment of tuberculosis, are in the line of thought that at present underlies our attempts to cope with the disease. These observers have been able to demonstrate that in rabbits inoculated with a culture of the tubercle bacillus, the evolution of tuberculosis can be arrested by subsequently subjecting the animal to injections of dog's serum.

When very virulent cultures are employed, the evolution is only delayed. Injections of a healthy animal with the serum, prevent the development of experimental tuberculosis at a later period. The effective substance has not been identified as yet, but a small dose of the serum is sufficient (half a cubic centimetre per kilo of the rabbit).

The clinical results obtained in tuberculous disease of human beings by this method of treatment, which has been fully tried in the Paris hospitals, would indicate that it also fails rather in the degree than in the kind of its action. It certainly acts as a potent stimulant to cell-activity. Whether it possesses another action is undetermined.

CHLORIDE OF ZINC TREATMENT.

I shall briefly refer to the treatment of tuberculous disease with chloride of zinc injections at the site of the disease, announced to the French Academy of Sciences in July of the past year, by Professor Lannelongue.²¹

It is based essentially on the simple fact that fibrinous induration is to be regarded as the natural curative process in tuberculous lesions. The power of the chloride of zinc to excite such sclerotic processes, when administered in sufficiently small quantity to avoid its more powerful escharotic action, suggested its use in the disease in question. Its action in experimental tuberculosis is thus described by M. Lannelongue and M. Achard. The anatomical elements of the tissues which it penetrates, are destroyed and an enormous proliferation of embryonic cells occurs, not only at the site of the injection, but for some distance around it, with infiltration of the tuberculous tissues with migratory cells to the fullest extent. M. Lannelongue suggests that the latter may destroy the bacilli through the exercise of their phagocytic function. The morbid tissue destroyed by the chloride of zinc is slowly absorbed and disappears; the embryonic cells, on the contrary, organize with great rapidity and form firm fibrous tissue, which exists in appreciable quantity as early as the day following the injection.

Twenty-two patients were subjected to this treatment by M. Lannelongue. The list embraces two cases of pulmonary tuberculosis and twenty of suppurating and non-suppurating tuberculous disease of joints and glands. Excellent results are claimed to have been obtained in a majority of the latter. An opportunity was afforded in a case of more or less fused tuberculous glands for comparing histologically, glands which had been injected and those which had been left without treatment. Excision showed caseous material surrounded by a zone of tuberculous tissue within a fibrous sheath, in each; in the injected glands, however, there was a large amount of dense fibrous tissue and firm adhesion to the investing membrane. A report of the results in the pulmonary cases was reserved until a longer period had elapsed.

While recognizing the possible utility of this method of treatment in tuberculous joint and gland disease, either as a remedial measure or as an adjunct to surgical procedures and suggesting the desirability of more extended investigations in this direction, its application in pulmonary tuberculosis, in my judgment, should be regarded with the greatest reserve. Aside from the difficulty of introducing intra-pulmonary injections in any exact way at the site of the lesion, the extent and complexity of the morbid conditions usually

present would seem to preclude the possibility of its usefulness as a method of treatment.

The technique of the method employed by M. Langelongue is to inject two drops of a ten per cent. solution, in a number of places around the periphery of the diseased part, in cases of tuberculous joints, bones and glands. Suppurating glands are thoroughly irrigated with sterilized water and the injections made under rigid antiseptic precautions. In cases of pulmonary tuberculosis, a solution of one in forty is used for the injections.

THE TREATMENT OF TUBERCULOSIS WITH CREASOTE, GUAIACOL AND CARBONATE OF GUAIACOL.

The literature of the treatment of phthisis pulmonalis with creasote, both by internal administration and by inhalation, is sufficiently familiar to those interested in the subject, to warrant the briefest reference to it.

Discovered by v. Reichenbach in 1830, it quickly secured a reputation in Germany, France, and England as a remedial agent in pulmonary disease. It however gradually fell into disuse, and was only rehabilitated in favor in 1877 through the admirable clinical paper of Bouchard and Gimbert on its beneficial effects in consumption.²⁵ Influenced by their statements, Beverley Robinson instituted its systematic use in his hospital and private practice in this city, as early as 1878, and valuable papers by him have appeared from time to time since on this subject.

In Germany, a series of publications by Sommerbrodt, Fraenzel, v. Brunn, Guttmann and others, confirmatory of the results obtained by Bouchard and Gimbert, appeared in 1887 and 1888. The literature of the subject at the present time is very voluminous, and it may be said to be exceptionally favorable to the value of creasote in the treatment of pulmonary phthisis.

Varied opinions are held in regard to its mode of action, its most efficient dosage and the best method of administration. The determination of these several points is of scientific interest as well as of practical import.

The efficacy of creasote in hindering or arresting fermentative processes in the digestive tract, so frequently present in phthisical patients and thereby promoting appetite, digestion and nutrition, is very generally admitted. Its ability to favorably affect appetite, and to increase the digestive secretions when given by the mouth, by locally stimulating the gastric and intestinal nerve filaments, is also very probable. Through the promotion of a better nutrition, the beneficial effects claimed for creasote in stimulating the resolution and absorption of the secondary inflammatory exudations in tuberculous lungs, may be explained. By its local action, antiseptic and stimulating, especially when given in the form of inhalations, a favorable influence upon the simple catarrhal processes so commonly present, is conceivable and probable. In turning our attention to any specific action which creasote may exercise upon the pathogenic cause of tuberculosis and its specific lesions, the results of experimental investigation properly should be considered.

Guttmann,²⁶ as the result of test-tube experiments, which he claimed, demonstrated the power of creasote, in solution of 1 to 4000, to greatly inhibit the growth of tubercle bacilli, and in solutions of 1 to 2000, to completely devitalize them, was led to believe that a similar specific action could be effected in the human

body by the administration of sufficiently large doses of the drug. One gramme of creasote, according to his calculations, present in the circulation, would suffice for this purpose. The experimental investigations very kindly undertaken for me by Dr. John Ely in the Pathological Laboratory of the College of Physicians and Surgeons, and which will be given in detail later, confirm the correctness of Guttmann's observations on the germicidal power of creasote.

Granting, therefore, the germicidal action of creasote *outside* of the human body, and also the possibility of administering it, without injurious effects in daily doses larger than those demanded by Guttmann's hypothesis, a seemingly fatal objection to the theory of the exercise of a germicidal action *in the economy*, is found in very recent investigations, which indicate that creasote enters at once, in the blood, into chemical combinations with certain contained albuminoids, combinations which are without specific germicidal influence. Moreover it has been wisely said that "man is not a test-tube," and no fact appears to be more clearly proved than that the germicidal action of a drug outside of the body affords little basis for correct conclusions of its therapeutic value. Experiments on animals are necessary to determine these points.

In pursuance of this idea, numerous investigators have attempted to test the anti-bacillary power, as well as other effects of creasote in tuberculosis, by the treatment of animals with large doses of this drug both before and after the production of experimental tuberculous disease. I shall refer only to the very interesting experiments of Trudeau²⁷ and Cornet.²⁸

Trudeau's experiments: Four rabbits were inoculated in the anterior chamber of the eye and in the right chest with a similar amount of pure cultures of tubercle bacilli suspended in water. Two of the rabbits were kept as "controls." Two were treated every other day with subcutaneous injections of five cubic centimetres of a ten per cent. solution of pure creasote in almond oil. The course of the eye tuberculosis in the test animals was daily compared with that in the "controls," and was seen to be entirely uninfluenced by the treatment. Tubercles became visible in the iris from the twelfth to the thirteenth day in both sets of animals. Iritis, cloudiness of the cornea and general secondary inflammatory changes were noted in all the rabbits from the eighteenth to the twenty-first day, and the sight was soon lost. All were killed two months after inoculation, and the lungs of both the test and the control animals presented the lesions of advanced tuberculosis.

Cornet's experiments were as follows: Seven strong guinea-pigs were treated with creasote, introduced into the stomach by means of a tube, in doses equivalent for the body weight of a man to rather more than two grammes daily, for a period varying from one to two months. At the expiration of this interval they, with four control animals, were either inoculated with, or were compelled to inhale, finely atomized pure cultures of tubercle bacilli, the creasote treatment being continued in the test animals. A single test guinea-pig died of pneumonia ten days after inoculation. The remaining six died respectively thirty, thirty-two, thirty-three, forty-three, seventy-seven and eighty-four days after infection. Two of the control animals were killed on the thirty-second and forty-third day after infection, the two remaining died on the sixty-first and eighty-fourth day after inoculation. All the animals, both

test and control, presented the characteristic lesions of tuberculosis and very little, if any, appreciable difference in the appearance, the degree or the distribution of these could be detected in the two sets.

Experimental investigations, therefore, show in the most positive manner that creasote, administered even in heroic doses, is incapable either of preventing the development of experimental tuberculosis, or of arresting its progress.

The theory of Bouchard, Gimbert, Jaccoud and others that creasote promotes connective tissue growth, by means of which recovery in tuberculous disease is favored, also is not borne out by experimental studies in animals.

The explanation of any favorable influence of creasote on sclerotic processes which *clinical* observations may indicate, should seemingly be sought in the improved nutrition which obtains through its use rather than by the exercise of any specific action.

Guaiacol, obtained by fractional distillation of beech-wood-tar creasote, and constituting sixty to ninety per cent. of the latter, was suggested by Sahli,²⁰ as early as 1887, as a substitute for creasote in the treatment of tuberculous disease. It represents the active principle of creasote, and may be substituted appropriately for it. As prepared in the various laboratories, it probably is not freed from all impurities.

Owing to this fact, very lately Seifert and Hoelscher²¹ have proposed the use of the carbonate of guaiacol. Carbonate of guaiacol possesses the advantages over creasote and guaiacol of being a simple, definite and crystalline substance which can be obtained chemically pure. It is a neutral salt, and is tasteless as well as odorless; it does not produce digestive disturbances; it is indifferent to gastric secretion and decomposes in the intestine into guaiacol and carbonic acid.

Many of the above characteristics of this salt have been demonstrated in its use in St. Luke's Hospital. Seifert and Hoelscher, as the result of experimental studies with guaiacol carbonate, have advanced a new and interesting theory of the mode of action of the creasote preparations in tuberculous disease. The basis of their theory apparently rests on the fact that experiments on dogs show that creasote and guaiacol do not circulate in a free state in the blood, and that they are eliminated by the kidneys in the form of the salts of ethyl sulphuric acid (etherschwefelsäure). They argue that during absorption, the active principle of creasote allies itself with the albuminoids in the blood and specifically through the agency of the sulphur contained in the albumin molecule. The blood of tuberculous patients contains in addition to normal albumin other albuminoid substances arising from the disease process, that is, the products of the tubercle bacilli. These substances constitute unstable combinations, prone to cause or undergo chemical processes, which act poisonously. The toxic albuminoids engendered by the disease, are chiefly responsible for the fever, night sweats, etc. The guaiacol by allying itself with them, renders them stable and therefore non-toxic. The chemical combinations effected by the guaiacol are without germicidal influence, and the favorable results obtained through the use of the creasote preparations in tuberculous disease, therefore, should be regarded as due in a large measure to their influence in assisting in the elimination of the toxic products of the specific disease process.

Seifert's and Hoelscher's theory in no respect militates against other favorable influences which have been ascribed to the creasote preparations, such as the probable direct stimulation of the appetite and thereby improved nutrition, etc. The observations thus far made in St. Luke's Hospital in the use of guaiacol carbonate lead me to believe that it may be substituted very favorably for both creasote and guaiacol.

INVESTIGATIONS IN ST. LUKE'S HOSPITAL WITH MODIFIED TUBERCULIN, CREA-SOTE, GUAIACOL AND CARBONATE OF GUAIACOL.

During the past winter sixty-five cases of pulmonary tuberculosis have been under my care continuously in the wards of St. Luke's Hospital. Many of these were cases of very advanced disease, without the possibility of recovery, and the treatment consisted merely in attempts to ameliorate the most distressing symptoms. Nineteen of the remaining cases were selected for treatment, respectively with Hunter's modifications of Koch's tuberculin, with subcutaneous injections of guaiacol and with creasote by the mouth. It was my desire, not so much to test the comparative merits of different methods of treatment, as to corroborate or otherwise, Cheyne's and Hunter's observations, and to determine both the practicability of employing a very large daily dosage of creasote and any advantages this method might possess over its use in smaller quantities. Seven cases of well-marked tuberculosis are embraced in the group treated with Hunter's modified tuberculin. The details of the histories of these patients and the results of treatment are given in a tabulated form for convenience of study. It will be seen that three cases have been under treatment for three months, the remainder for nearly two months. Physical examination in two of the former cases indicates no appreciable change in the pulmonary lesions during treatment. In the third case, the improvement in the signs of disease and in all other respects has been most marked. Physical examination indicates not only the dryness of the cavity but also its very evident contraction, as well as a diminution in the degree of the contiguous disease process. In the four remaining cases, there has been no improvement in one; in one, improvement has been marked; in one, it was distinct, though less marked; and in one case an *arrest of the disease*, at least temporarily, has occurred. By improvement is meant a marked diminution in the physical signs of disease.

The seventh case is certainly an example of arrested phthisis. This is of such rare occurrence in pulmonary tuberculosis of this degree, under conditions which commonly prevail in large city hospitals, as to be particularly noteworthy. A very distinct impression has been made on my mind in observing from day to day the cases treated with modified tuberculin, that its stimulation of the nutritive processes is not so marked as its effect upon the specific lesions. Creasote, on the other hand, has seemed to me to possess the former quality in a greater degree. To meet possible criticism, all the above cases have received no other treatment than tuberculin, beyond the administration of cod liver oil and, from time to time, various ferruginous preparations.

The exact mode of preparation of the modifications used is given in a note. The rules of dosage were to give 0.002 gm. for the initial inoculation and to increase by 0.002 gm. daily. The rule also was made

not to increase the dose, if any elevation of temperature followed inoculation. With the modifications B and CB, appreciable reactions did not occur in these cases. In a single case, treated with CB, a rise of temperature followed an inoculation of 0.008 gm. and an acute catarrhal process was developed at the apex of one lung. At the expiration of the tenth day, defervescence occurred, and no further ill effect has followed. For this reason, modification B has been used in all other cases but one. Trudeau has also adopted, I believe, modification B as the preferable one. Through the absence of all reaction and discomfort attending the use of B all patients treated with it have been able to be continuously about the ward and out of doors. Only the usual, very inexact, method for determining the number of bacilli in the sputum was used. Repeated examinations were made and they were found in all.

The number of cases treated with modified tuberculin, while much too small to permit the expression of a positive opinion of its power to exercise a specific remedial action, is large enough to indicate in the strongest manner the desirability of continued investigations of its apparently specifically beneficial effects.*

My desire to test the practicability of employing a very large daily dosage of the creasote preparations, and to determine, if possible, any advantage which this method might possess over their use in smaller quantities, has been fulfilled in a measure. Several of the patients selected for this treatment, presented a well-marked degree many of the symptoms, namely, hectic, sweats, etc., attributed to the toxic influence of the products of the bacillus, and were therefore well adapted to test the effect of creasote upon such manifestations.

It will be seen in a study of the tabulated report that seven cases have been treated with subcutaneous injections of guaiacol, rapidly pushed to a daily dosage of one gramme, and five cases with creasote by the mouth, also rapidly increased to six grammes daily. In four of the former cases there has been little if any appreciable change in the physical signs of disease. In one of these, however, the general condition has greatly improved and there has been a gain in weight of eight pounds. In one, the weight has decreased by one and three-quarter pounds; in one, there has been a loss of four pounds; in one, the weight has remained stationary. In two of these cases, the daily sputum has slightly increased in amount, in two, it has slightly diminished.

In the three remaining cases, there has been a progressive increase of the pulmonary lesions. No influence upon hectic, when present, has been observed.

* Method of preparation of Hauer's modifications:

Modification E. One cubic centimetre of tuberculin, five cubic centimetres distilled water, saturation with preferably large crystals of ammonium sulphate for twenty-four hours in the cold, the precipitate filtered off and freed so far as possible from any crystals of ammonium sulphate, placed in dialyzer and dialyzed just so long, and no longer, that runnings water and then in distilled water until all trace of ammonium sulphate has disappeared. One cubic centimetre added to the solution to prevent any putrefactive change; the solution thus made up to such bulk that ten cubic centimetres shall correspond to each cubic centimetre of tuberculin employed. (Title B, 10%).

Modification F. One cubic centimetre of tuberculin dropped into twenty cubic centimetres absolute alcohol, left to stand, then filtered off in a quarter of an hour, filtrate evaporated over water bath at temperature preferably not exceeding 40° C., and just sufficiently long to drive off all alcohol; residue taken up in twelve cubic centimetres distilled water; placed in dialyzer and dialyzed for two hours in running water until all trace of alcohol has disappeared to twenty cubic centimeters, including two cubic centimetres of pure glycerine used for preservative purposes. A few crystals of thymol added. (Title CB, 10%).

The above modifications were prepared for me in the chemical laboratory of the College of Physicians and Surgeons.

Night sweats, however, have been affected favorably. In a single case, suffering from chronic diffuse nephritis (confirmed by autopsy), a marked increase in the albuminuria was observed when a daily dosage of one gramme was reached. The treatment was then discontinued and the albuminuria gradually diminished. In no other case, treated either with guaiacol or creasote, has any trace of albumin appeared in the urine, in examinations made every other day. In a single case, when the maximum dose of guaiacol was reached, the urine became dark in color and very similar in appearance to urine containing carbolic-acid products.

Dr. Ely's report on the enumeration of tubercle bacilli in the daily sputum of several patients treated with guaiacol, contains observations of interest and practical import. It indicates the possibility of incorrect conclusions even from the best method at our command for this purpose; also the absence of bacilli from time to time, in the sputum of patients suffering from grave pulmonary tuberculosis.

In Cases II and IV, where there has been no apparent increase in the lesions and the general condition has remained stationary; the number of bacilli has greatly diminished.

In Case VII, in which the area of disease has slightly increased and the general condition has deteriorated, the bacilli have greatly increased in number.

In the cases treated with creasote, there has been no appreciable difference in the physical signs of disease up to the present date, in two. In these, there has been a gain of one pound and a loss of three pounds respectively.

In the three remaining cases there has been a progressive increase of the lesions. The effect of a very large daily dosage of creasote upon hectic and sweats corresponds to that noted in the use of guaiacol. Entire tolerance of six grammes (over one and one-half drachms) of creasote was exhibited by three of the five patients. One complained of slight gastric discomfort when a daily dosage of five grammes was reached, and one patient who had suffered from occasional nausea and vomiting previous to the administration of creasote, believed that these symptoms were increased by it. Several other patients at present in my wards are taking four to six grammes of guaiacol daily, without gastric or intestinal discomfort.

Carbonate of guaiacol has been used, so far as its supply permitted; and aside from the advantage of being tasteless and odorless and only being decomposed by the intestinal secretions, it has seemed to me to very positively stimulate appetite.

The clinical conclusions which I have formed from a careful study of these cases are: that both creasote and guaiacol in certain forms can be given in very large doses with entire tolerance and without injurious effects; that such dosage apparently possesses no advantages over a much smaller one, and that it has no greater effect upon hectic and night sweats; that subcutaneous injections of the drug possess no advantages over administration by the mouth; that whatever beneficial influence creasote may exert in pulmonary tuberculosis can be effected with a comparatively small dosage, and that favorable results can be expected only by its continuous and prolonged employment.*

* Creasote was administered, without exception, in the form of what are known as the "Enteric Pills" of a well-known manufacturer. The nature of their protecting envelope I am ignorant of. Personal investigations of the effect of an artificial gastric juice

TREATMENT WITH SUBCUTANEOUS INJECTIONS OF HUNTER'S MODIFIED TUBERCULIN.

No. sex, age.	Patient's history and physical examination at beginning of treatment.	Patient's weight, daily sputa, inoculation used, date when begun.	Duration of treatment weight, and sputa, to date.	Physical examination at present date.
1. Male, 42.	Profuse haemoptysis 5 years ago; pleurisy 3 years ago; night-sweats and cough since, with loss of 40 lbs. in weight. Physical signs: Slight retraction beneath right clavicle. Evidence of cavity in first interspace; also very abundant lanugine moist rales at this site. Abundant subcrepituation from first space, anteriorly. Some side and abundant subcrepituation with larger rales, over supraspinous fossa. Abundant subcrepituation over whole of scapular region. Patient apyretic.	Jan. 13, 1892; weight, 132 lbs. Sputa, 3½; daily average, "B." 0.002 gm. to increase by 0.002 gm. daily.	April 25, 1892; weight, 141 lbs. Sputa, 3½; daily average, "B." 0.002 gm. to increase by 0.002 gm. daily.	April 25th.—Physical signs: Marked retraction, directly beneath right clavicle. Signs of cavity distinctly heard and it is apparently now dry. Subcrepituation in second space; below this point, no adventitious sounds present. Posteriorly, adventitious sounds absent. No evidence of cavity or marked diminution of subcrepituation over scapular region. Patient apyretic; no night-sweats. <i>Very marked improvement.</i>
2. Male, 46.	History of 18 months; sputum occasionally tinged with blood; absence of night-sweats. Physical signs: Consolidation without crepituation over first and second right sternal and over supraspinous fossa. Posteriorly, some subcrepituation in interscapular region. Left lung, feeble respiratory murmur, with scanty subcrepituation beneath clavicle and over supraspinous fossa. Evening temperature occasionally 100°.	Jan. 14, 1892; weight, 122 lbs. Sputa, 3½; daily average, "C. B." 0.002 gm. to increase by 0.002 gm. daily.	April 25, 1892; weight, 125 lbs. Sputa, 3½; daily average, "C. B." 0.002 gm. to increase by 0.002 gm. daily.	April 25th.—Physical signs: Practically the same as at first examination. Evening temperature occasionally 100°. Condition stationary.
3. Female, 32.	History of cough and occasional hemorrhage for past 2 years. Physical signs: Dullness, with rather abundant subcrepituation in first right sternal and cavity subcrepituation in second space. Dullness, with moderate subcrepituation posteriorly, over supraspinous fossa and scapular region. Patient apyretic.	Jan. 17, 1892; weight, 105 lbs. Sputa, 3½; daily average, "C. B." 0.002 gm. to increase by 0.002 gm. daily.	April 21, 1892; weight, 107 lbs. Sputa, 3½; daily average, "C. B." 0.002 gm. to increase by 0.002 gm. daily.	April 21st.—Physical signs: Dullness with scanty subcrepituation in first space; absent in second. Dullness with scanty subcrepituation over supraspinous fossa and scapular region. Little appreciable difference from first examination. Patient apyretic. Condition stationary.
4. Male, 50.	Cough for past year; gradual loss of flesh and strength. Physical signs: Impairment of resonance over upper half of left chest, anteriorly, with fairly abundant subcrepituation over lower half posteriorly, impairment of resonance over upper half of left chest, with abundant subcrepituation over supraspinous fossa and scanty in areas over scapular region. Patient apyretic.	March 2, 1892; weight, 144 lbs. Sputa, 3½; daily average, "B." 0.002 gm. to increase by 0.002 gm. daily.	April 25, 1892; weight, 143 lbs. Sputa, less than 3½; daily average, "B." 0.10 gm. to increase by 0.002 gm. daily.	April 25th.—Physical signs: Little appreciable difference in resonance over upper half of left chest since first examination. Crepituation has almost entirely disappeared anteriorly, and is practically absent posteriorly. Patient apyretic. <i>Marked improvement.</i>
5. Male, 32.	Hemorrhage 5 years ago and another 3 years ago, very profuse. Since latter, unable to work, and has lost 40 lbs. in weight. Treated with tuberculin in Presbyterian Hospital, which was followed by temporary improvement. Physical signs: Diffuse infiltration upper lobes of both lungs, with abundant subcrepituation at apices and scattered over remainder of affected regions. Most marked right apex; occasional night-sweats. Patient apyretic.	March 2, 1892; weight, 123 lbs. Sputa, 3½; daily average, "B." 0.002 gm. to increase by 0.002 gm. daily.	April 25, 1892; weight, 119 lbs. Sputa, 3½; daily average, "B." 0.075 gm. to increase by 0.002 gm. daily.	April 25th.—Physical signs: No appreciable difference from first examination. Occasional night-sweats. Patient apyretic. Condition stationary.
6. Male, 33.	Cough for 3 months; no haemoptysis, no night-sweats. Physical signs: Impairment of resonance, with abundant subcrepituation over right infraclavicular region. Abundant subcrepituation in second and third spaces. Similar signs over whole left chest anteriorly; in less degree also over left supraspinous fossa and scapular region. Slight pyrexia; evening temperature, 100°—100°2.	March 3, 1892, treatment begun March 21st. weight, 120 lbs. Sputa, 3½; daily average, "B." 0.002 gm. to increase by 0.002 gm. daily.	April 25, 1892; weight, 131 lbs. Sputa, none. "B." 0.100 gm. to increase by 0.002 gm. daily.	April 25th.—No appreciable difference in impairment of resonance over affected regions. Subcrepitation scanty at present over right chest, and absent over supraspinous fossa and scapular region, left. Anterior, same but with appreciable difference from first examination. Patient apyretic since March 18th. <i>Improvement.</i>
7. Male, 41.	Cough for 6 months; no haemoptysis, no night-sweats; gradual loss of flesh. Physical signs: Impairment of resonance, slightly prolonged and high pitched expiration, with abundant subcrepituation in first two spaces, left; scanty, fine crepituation in second and third spaces, over supraspinous fossa beneath clavicle; over upper half scapular region, scanty crepituation after cough. Slight pyrexia; occasional evening temperature, 100°.	March 3, 1892; weight, 123 lbs. Sputa, none. daily average, "B." 0.002 gm. to increase by 0.002 gm. daily.	April 18, 1892; weight, 125 lbs. Sputa, none. Discharged, through desire and ability to go to work.	April 25th.—Impairment of resonance over first two spaces. Respiration feeble, but expiration slow and prolonged or increased in pitch. <i>Entire absence of all adventitious sounds over upper half left chest, anteriorly and posteriorly.</i> Patient continuously apyretic since March 18th. <i>Disease at present arrested.</i>

except where all the conditions necessary to the growth of tubercle bacilli were observed, so that the entry upon the envelope showed that it was partially dissolved after one hour.

Notwithstanding Guttmann's statement to the contrary, it was thought possible that the alcohol necessary for the solution of the creosote might have a disturbing influence upon the experiment.

CASE VII, tabulated on page 518 may be referred to as an example. About eleven ounces of sputum were eliminated daily. This was so viscid that its disintegration necessitated the addition of considerably more than an equal bulk of potash and water, so that the

TREATMENT WITH SUBCUTANEOUS INJECTIONS OF GUAIACOL RAPIDLY INCREASED.

No. sex. age.	Patient's history and physical examination at beginning of treatment.	Patient's weight, daily average of sputa (3), when guaiacol 1 gm. daily was begun; date.	Duration of treatment, weight, and sputa, to date.	Physical examination at present date.
1. Female 17.	Cough for 10 months; progressive loss of flesh and strength; no haemoptysis; moderate night-sweats. Physical signs: Excavation at right apex anteriorly, with consolidation below; below, large lung, consolidation with numerous large abscesses and abundant subcrepititation over whole of scapular region, below fine crepitatio. Left, anteriorly, moderate consolidation at apex, fine crepitatio. Advanced lung-disease. Marked hectic; evening temperature, 102°-103°.	Weight, Feb. 27, 1892, 70 lbs. Average daily sputa, 3 ss.-3 1/2 ss. Guaiacol, 0.05 gm. daily, to increase 0.05 gm. daily to 1 gm.	March 20, 1892, 71 lbs. Average daily sputa, 3 1/2-4 ss. Guaiacol, 1 gm. reached to-day; discontinued.	March 20th.—Physical signs: Progressive increase of lesions; night-sweats. Marked hectic; evening temperature, 102°-103°.
2. Female 39.	Haemoptysis 3 years ago; present history of cough 3 months; progressive loss of flesh and strength; no night-sweats. Physical signs: Dulness, prolonged and high-pitched expiration over left infrachlavicular region, with very abundant subcrepitatio. Same signs anteriorly over upper half of left lung. Impaired respiratory signs, in degree, anteriorly and posteriorly over upper half. Slight pyrexia; evening temperature, 100°.	Weight, Feb. 27, 1892, 91 lbs. Average daily sputa, 3 1/2-4 ss. Guaiacol, 0.05 gm. daily to increase 0.05 gm. daily to 1 gm.	April 25, 1892, 91 lbs. Average daily sputa, 3 1/2-4 ss. Guaiacol, 1 gm. daily for 27 days.	April 25th.—Physical signs: Little appreciable difference from first examination except subcrepitatio now heard over whole left lung posteriorly. No night-sweats. Slight evening temperature.
3. Female 24.	Pleurisy, right side, 3 years ago. Empyema same side 1 year ago, excision of rib; cough and frequent haemoptysis since; no night-sweats. Physical signs: Large antrum in rest right space, partly dry. Moderate consolidation, without crepitatio, in second space. Consolidation, apex, same lung, posteriorly, without crepitatio. Patient apathetic.	Weight, Feb. 27, 1892, 135 lbs. Average daily sputa, 3 1/2-4 ss. Guaiacol, 0.05 gm. daily to increase 0.05 gm. daily to 1 gm.	April 25, 1892, 141 lbs. Average daily sputa, 0-3 ss. Guaiacol, 1 gm. daily for 37 days.	April 25th.—Physical signs: Anteriorly, no appreciable difference from first examination; posteriorly, moderate subcrepitatio at apex and over upper half of scapular region. Patient apathetic; occasional night-sweats. Marked improvement in general condition.
4. Female 44.	Pneumonia 3 years ago; cough since; no haemoptysis; no night-sweats at present. Physical signs: Consolidation, with fairly abundant subcrepitatio at both apices. Subcrepitatio also present over upper half of lungs, with abundant subcrepitatio in upper third left scapular regions. Slight pyrexia; occasional evening temperature, 100.2°.	Weight, Feb. 28, 1892, 91 lbs. Average daily sputa, 3 ss.-3 1/2 ss. Guaiacol, 0.05 gm. daily to increase 0.05 gm. daily to 1 gm.	April 25, 1892, 90 lbs. Average daily sputa, 3 ss. Guaiacol, 1 gm. daily for 37 days.	April 25th.—Physical signs: No appreciable difference from first examination; no night-sweats. Occasional evening temperature, 100.2°-100.5°.
5. Female 32.	Grippe a year ago; cough since; no haemoptysis; profuse night-sweats. Physical signs: Areas of infiltration throughout upper lobe, right lung, with abundant subcrepitatio. Areas of infiltration upper lobe, left lung, with abundant subcrepitatio, of beginning; excavation at apex. Hectic; evening temperature, 101°-102°.	Feb. 28, 1892, 72 lbs. Sputa, 3 1/2-4 ss., daily average. Guaiacol, 0.05 gm. daily; increasing 0.05 gm. daily. March 1, 1892, 0.60 gm. Weight, 73 lbs.; sputa, 3 1/2-4 ss.	March 15, 1892, guaiacol by mouth, mix. miu, miu daily average. March 24th, miu daily in pill; not increasing. April 1, 1892, weight, 64 lbs. April 2, 1892, sputa, 3 1/2-4 ss.	April 1st.—Physical signs: Progressive increase of lesions; moderate night-sweats. Treatment apparently some effect on sweats, none on fever. Died April 7, 1892.
6. Female 46.	History of 10 months; a single haemoptysis; night-sweats almost continuously. Physical signs: Large antrum, apex left lung, with impaired resonance and abundant subcrepitatio to base anteriorly. Posteriorly, areas of infiltration over base. Beginning disease at right apex. Hectic; evening temperature, 101°-102°.	Feb. 28, 1892, 93 lbs. Sputa, 3-3 1/2 ss., daily average. Guaiacol, 0.05 gm. daily; increasing 0.05 gm. daily. March 1, 1892, 0.45 gm. Weight, 92 lbs.; sputa, 3 1/2-4 ss.	Treatment discontinued before maximum dose reached; no further treatment. March 24, 1892, weight, 96 lbs. March 31, sputa 3 ss.-3 1/2 ss.	March 10th.—Progressive increase of lesions. Treatment apparently some effect on night-sweats, none on fever. Died April 1, 1892.
7. Male 31.	Typical history since last November; several haemoptyses; no night-sweats. Physical signs: Feeble respiratory murmur, with abundant subcrepitatio over whole right lung anteriorly, and upper half of scapular region. Similar signs in slightly less degree over upper left lung; left lung, anteriorly and posteriorly. Pyrexia; evening temperature, 101°-102°.	March 2, 1892, 92 lbs. Sputa, 3-3 1/2 ss., daily average. Guaiacol, 0.05 gm. daily; increasing 0.05 gm. daily. March 21, 1892, 1 gm. for 2 days. Weight, 88 lbs.; sputa, 3 vij.	March 22, 1892, guaiacol enemas, gr. vi daily by rectum; miu, miu daily in pill; not increasing. April 19, 1892, guaiacol pills, myi daily in pill; not increasing. April 25, 1892, weight, 88 lbs.; sputa, 3 vij.	April 25th.—Physical signs: Very similar to that of first examination; excess subcrepitatio heard over whole of left lung anteriorly and posteriorly; no night-sweats; pyrexia. Evening temperature, 100°-101°. General condition worse.

bath at temperature preferably not exceeding 40° C., and just sufficiently long to drive off all alcohol; residue taken up in twelve cubic centimetres distilled water; placed in dialyzer and dialyzed for two hours in running stream of water. Quantity made up to twenty cubic centimeters, including two cubic centimetres of pure glycerine used for preservative purposes. A few crystals of thymol added. C. I. G. 10%.

The above modifications were prepared for me in the chemical laboratory of the College of Physicians and Surgeons.

small dosage, and that favorable results can be expected only by its continuous and prolonged employment.

* Creasote was administered, without exception, in the form of what are known as the "Esterie Pills" of a well-known manufacturer. The nature of their protecting envelope I am ignorant of. Personal investigations of the effect of an artificial gastric juice

Dr. Ely's reports of his investigations on the germicidal action of creasote on the tubercle bacillus outside of the human body, and on the enumeration of bacilli in the daily sputum of patients, treated with guaiacol, are appended.

For valuable assistance rendered me in my investigations, I desire to express my thanks to Drs. John Ely and Robert J. Devlin and to the gentlemen of the House Staff of St. Luke's Hospital, Drs. Hollis, Rogers, Bunce, and Tuttle.

DR. ELY'S REPORT ON THE GERMICIDAL ACTION OF CREA-SOTE OUTSIDE OF THE HUMAN BODY.

Shortly after the revival of interest in creasote as a therapeutic agent in tuberculosis, the question arose as to the manner in which its beneficial effect was produced. Its general preservative and anti-fermentative properties had long been recognized and made use of in the arts, and the possibility of a similar inhibiting or germicidal action upon the specific germs of tuberculosis at once suggested itself. With a view to the solution of this problem, Guttmann undertook a more definite determination of its germicidal action.

In his experiments nutrient gelatine was impregnated with creasote in proportions varying from 1:500 to 1:8000. Into this, seventeen different species of bacteria, thirteen of them pathogenic, were inoculated, at the same time similarly inoculated tubes of ordinary nutrient gelatine serving as controls. The inhibiting action of the creasote was found to vary considerably with the different species, but in general a creasote content of 1:2000 was found sufficient to prevent growth. The plan of experiment received slight modification in the case of the tubercle bacillus, blood-serum being used as the nutrient medium and the cultures, after inoculation, being placed in the thermostat at a temperature of 37° C. After several weeks, examination showed a meagre growth in the tubes which had contained creasote in the proportion of 1:16000; none in the others.

Since these experiments of Guttmann, so far as I am aware, stand quite alone, it has been thought advisable to repeat them in so far as they relate to the tubercle bacillus, but in slightly modified form. Instead of blood-serum, glycerine-bouillon and glycerine-agar have been used as nutrient media, both of which have shown themselves particularly well adapted to the growth of the tubercle bacillus; and an aqueous solution of guaiacol, the principal ingredient of creasote, had been substituted for the alcoholic solution of creasote employed by Guttmann in the preparation of his media.* These media were impregnated with guaiacol in the proportions of 1:1000, 1:2000, 1:3000 and 1:4000, and into them were introduced particles of a rapidly growing culture of the tubercle bacillus, other media, not containing guaiacol, being at the same time inoculated as controls. All were then sealed and placed in the thermostat at 37° C. At the end of seven weeks they were examined and the records tabulated below noted. It may be permissible to state here that every slightest indication of growth was carefully searched for and that no record is made except where all the conditions necessary to the growth of tubercle bacilli were observed, so that the entry

upon the envelope showed that it was partially dissolved after one hour.

* Notwithstanding Guttmann's statement to the contrary, it was thought possible that the alcohol necessary for the solution of the creasote might have a disturbing influence upon the experiment.

"No growth" in the tables below means literally what it says.

SERIES A. GLYCERINE-BOUILLON.
Inoculated March 11, 1892; Examined April 29, 1892.

Control, 4 Flasks.	1:1000, 2 Flasks.	1:2000, 2 Flasks.	1:3000, 3 Flasks.	1:4000, 2 Flasks.
1. Moderate growth, not spreading much, but heaping.	No growth.	No growth.	No growth.	Apparently slight heaping up, thought to indicate very slow growth.
2. Luxuriant growth, covering whole surface of the bouillon.	No growth.	No growth.	No growth.	Slight heaping, though somewhat questionable.
3. Luxuriant growth, covering whole surface of the bouillon.			No growth.	
4. Moderate growth, heaping.				

SERIES B. GLYCERINE-AGAR.
Inoculated March 11, 1892; Examined April 29, 1892.

Control, 4 Tubes.	1:1000, 5 Tubes.	1:2000, 5 Tubes.	1:3000, 5 Tubes.	1:4000, 5 Tubes.
1. Very luxuriant growth, heaping and spreading.	No growth.	No growth.	No growth.	No growth.
2. Abundant growth, heaping and spreading.	No growth.	No growth.	No growth.	Very slight heaping and cloudiness at edges as if growing sluggishly.
3. Moderate growth.	No growth.	No growth.	No growth.	Abundant growth.
4. Moderate growth.	No growth.	No growth.	No growth.	Very slight heaping; no apparent spreading.
	No growth.	No growth.	No growth.	Slight heaping and cloudiness at edges as if slowly spreading.

DR. ELY'S REPORT ON THE ENUMERATION OF BACILLI IN THE DAILY SPUTUM OF PATIENTS TREATED WITH CUTANEOUS INJECTIONS OF GUAIACOL.

While fully recognizing the illusive nature of conclusions as to the value of therapeutic agents based upon periodical determinations of the number of tubercle bacilli in the sputum, it has been thought desirable to make such determinations in a number of the cases treated with creasote and guaiacol.

The method employed for this purpose has been that recommended by Nuttall, the details of which are to be found in the *Bulletin of the Johns Hopkins Hospital*, Vol. II, No. 13, May, June, 1891.

Although this method is unquestionably the most accurate thus far proposed, it is nevertheless subject to great error, and the results are liable to be particularly misleading in cases in which the amount of expectoration is large and the number of bacilli small.

CASE VII, tabulated on page 518 may be referred to as an example. About eleven ounces of sputum were eliminated daily. This was so viscid that its disintegration necessitated the addition of considerably more than an equal bulk of potash and water, so that the

total amount after dilution came to be 700 cubic centimeters. Since the dropper used delivers about 100 drops to the cubic centimeter, the content of each drop (in this particular case) must be multiplied by 70,000 in estimating the total number of bacilli eliminated in twenty-four hours, and, of course, any error in the determination of the number of bacilli to the drop is similarly multiplied. And when there are only a few bacilli to each drop, all may be overlooked in counting fifty fields, or, on the other hand, a disproportionate number may chance to be seen. Thus, in Case VII, while the majority of the fields contained no bacilli, one had three. A discrepancy of 100,000 or so in a matter of small import when many millions of bacilli are present, but may be very misleading when there are only a few hundred thousand.

RESULTS OF THE DETERMINATION OF THE ACTUAL NUMBER OF TUBERCLE BACILLI IN TWENTY-FOUR HOURS' SPUTUM BY NUTTALL'S METHOD.

Case.	Date.	Quantity of Sputum.	Number of Bacilli.
I.	Feb. 21, 1892.	f 3 ix.	227,684,401
II.	Feb. 24, 1892. Mar. 23, 1892. Apr. 6, 1892. Apr. 29, 1892.	f 3 xii. f 3 ix. f 3 i. f 3 ii.	7,397,791 4,189,915 1,946,657 380,828
III.	Feb. 22, 1892. Mar. 23, 1892.	f 3 i. f 3 ii.	579,792 About 160 fields carefully gone over without finding any bacilli. Whole drop then examined systematically, and still none found. Stain good.
	Apr. 29, 1892.	f 3 iv.	6,858,096
IV.	Feb. 26, 1892. Mar. 23, 1892. Apr. 6, 1892. Apr. 29, 1892.	f 3 vi. f 2 vi. f 2 v. f 3 iv.	7,397,033 2,014,486 262,119 270,228
VII.	Mar. 17, 1892.	One hundred fields carefully gone over, no bacilli. Whole drop, no bacilli. Stain good. A second cover of same examined with same result.	
	Mar. 28, 1892.	f 3 x f 3 vi.	One hundred fields searched as above, no bacilli. Duplicate cover gives same result.
	Apr. 6, 1892. Apr. 29, 1892.	f 3 xi. f 3 xi.	1,367,395 2,915,976

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Original Articles.

PNEUMONIA IN BOSTON DURING THE RECENT EPIDEMIC OF INFLUENZA.¹

BY GEORGE B. SHATTUCK, M.D.,
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DURING the progress of the epidemic of influenza, with which, I think, we must acknowledge we have been visited this winter, I was impressed with the evident increase in the number of cases of pneumonia entering the City Hospital in my own service and in those of my colleagues, and also with the large number

¹ Read at the meeting of the Boston Society for Medical Improvement.

of deaths, especially among old people, as appearing in the daily papers and in the reports of the City Board of Health. Moreover, not a few of the pneumonias, as observed at the City Hospital, exhibited peculiarities or irregularities; they were less frank than usual in their development and in their resolution.

As I had about this time fallen a victim to your President's energy, and promised to occupy part of one of his evenings, it occurred to me I would look up these general points in a general way and give you the results, which might at least derive some interest and possibly some value from a comparison with those of a very recent previous epidemic of influenza, and those of an intervening non-epidemic year, sandwiched between the two.

But upon re-reading the contributions to the exposition of the relations between pneumonia and influenza and the mortality-rate and influenza, I found them more elaborate than I had remembered them to be. I thought, however, it was desirable that any new statements in regard to the past two years should be put in a form comparable with those previously furnished with regard to the previous epidemic. Hence, instead of letting you off with a few simple, and perhaps vague statements, I come before you with some tables, a form of setting forth facts which it has been my duty as an editor to discourage in others. The immediate cause of this unfortunate result is the zeal of your President, as before said; the remote cause is the zeal of my predecessors.

The Clinical Section of the Suffolk District Medical Society held a meeting January 15, 1890, for the discussion of influenza then epidemic in Boston, a discussion which was opened by Dr. F. C. Shattuck and closed by Dr. A. L. Mason;² at this meeting the relation of pneumonia to influenza was incidentally considered. The New York Academy of Medicine devoted its meeting April 7, 1890, to the discussion of the relation of pneumonia simply to influenza. Dr. E. G. Janeway occupied himself with New York, but his paper was not published; Dr. Wm. Pepper gave the results for Philadelphia;³ and Dr. F. C. Shattuck those for Boston.⁴

As our subject was not only the same but dealt with the same locality, it seemed better to follow the general plan of dealing with it adopted by my brother two years ago, and see how far the results would lead to similar conclusions reached by him then or formulated by Dr. Pepper from his figures and observations obtained in Philadelphia. Accordingly where there were tables — and I regret both for your sake and my own that there were so many — I have tabulated the same details for 1890-91, 1891-92, thus giving a comparison of eight years instead of six, and of two epidemic periods instead of one. For, whether or not there was a recurrence of influenza as an epidemic at any earlier period of the year 1891 than December, I think we may accept the months of December, 1890, and January, 1891, as practically free from it. I have tabulated the records of the Boston City and of the Massachusetts General Hospitals, from December 10, 1890, to February 1, 1891, and from December 10, 1891, to February 1, 1892, as a continuation of similar statistics for previous years. As arbitrary dates have to be

² Boston Medical and Surgical Journal, vol. exii, No. 7, 1890.

³ Remarks on the Frequency and Character of the Pneumonias of 1890; Medical News, vol. liii, p. 1, 1890.

⁴ The Relation of Pneumonia to Influenza in Boston: New York Medical Journal, vol. li, p. 626, 1890.

adopted to represent the epidemic limits, these are, perhaps, as good as any others. It may be that some observers would fix an earlier or a later date for the beginning or the decline of this or of the previous epidemic, but for purposes of comparison, especially in regard to diseases of the respiratory organs, it is, of course, essential to take as nearly as possible the same season of each year.

TABLE I.

Deaths from Pneumonia reported at the Boston City Hall for the Months of December and January, 1884-85 to 1891-92, inclusive.

Months.	1884-85	1885-86	1886-87	1887-88	1888-89	1889-90	1890-91	1891-92
December.	141	74	113	95	68	105	100	223
January.	103	83	91	183	92	332	139	240
Total.	244	157	204	278	160	437	239	463

Table I shows that the number of deaths returned in Boston as due to pneumonia, December and January, 1891-92, was greatly increased over the previous six non-influenza years; that this increase was about as great for December as for January; that the number of deaths for the two months exceeded that of 1889-90, by 26, though the distribution was different, there being 118 more deaths in December, 1891, and 92 less deaths in January, 1892.

TABLE II.

Cases of Pneumonia admitted to the Boston City and Massachusetts General Hospitals from December 10th to February 1st, for the Years 1884-85 to 1891-92.

	1884-85	1885-86	1886-87	1887-88	1888-89	1889-90	1890-91	1891-92
Total.	33	26	80	68	40	127	48	101
Deaths.	14	4	12	26	13	38	13	39
Mortality	42.4%	15.4%	40%	39%	32.5%	30%	27%	38%

Table II shows, from the hospital returns, that the mortality, as well as the number of cases, was largely increased, the per cent, being $5\frac{1}{2}\%$ above the average of the previous six non-influenza years, whereas it was $2\frac{1}{2}\%$ below the average of those years for the same period 1889-90. It is a curious coincidence that twenty-six fewer cases of pneumonia entered the hospitals, and twenty-six more deaths were reported at City Hall.

Table III shows by weeks that the increase in deaths from pneumonia began earlier and was more rapid this winter than last winter or the winter of the previous epidemic, and the same is true of bronchitis comparing this winter with last winter. The week ending January 2d, was the week of greatest mortality from pneumonia this winter, whereas last winter and the winter before it was a week later. The maximum mortality from bronchitis occurred the same week this winter as last winter, and the number of deaths was, curiously, the same; it was a week later than that for pneumonia. If the early increase in deaths from pneumonia was dependent upon epidemic influenza the epidemic this season should have manifested itself earlier than two years ago. Personally I should have said it developed, if anything, a little later. The editorial column of the *Boston Medical*

and *Surgical Journal*, which I understand rarely errs, under date of December 17, 1891, says: "It seems to be the general impression that epidemic influenza has once more made its appearance in the United States, though as yet it has not assumed a serious aspect. The Boston Board of Health does not officially recognize its presence in this city, but admits the apparent increase of catarrhal troubles and pneumonia during the last month," etc. The views of individual practitioners upon this point would be of value.

TABLE III.

Deaths from Pneumonia reported at the Boston Board of Health in December and January, 1889, 1890, 1891 and 1892, by Weeks.

Deaths from Bronchitis December, 1889, 1891, January, 1891, 1892.

Date.	Bronchitis.	Pneumonia.	Date.	Bronchitis.	Pneumonia.	Date.	Bronchitis.	Pneumonia.
1889. Week ending Dec. 7,	..	9	1890. Week ending Dec. 6,	11	11	1891. Week ending Dec. 5,	14	26
" 14,	..	13	" 13,	11	26	" 12,	14	41
" 21,	..	17	" 20,	11	22	" 19,	15	31
" 28,	..	36	" 27,	10	24	" 26,	27	57
1890. Week ending Jan. 4,	..	89	1891. Week ending Jan. 3,	16	27	1892. Week ending Jan. 2,	30	85
" 11,	..	117	" 10,	10	38	" 9,	38	79
" 18,	..	93	" 17,	12	31	" 16,	31	74
" 25,	..	38	" 24,	6	25	" 23,	24	35
			" 31,	18	29	" 30,	16	39

TABLE III bis.

Total Tabulated Cases of Pneumonia at the Boston City Hospital and Massachusetts General Hospital.

	City Hospital.	Mass. Hosp.	Total.
Dec. 10, 1890, to Feb. 1, 1891	..	36	14
Deaths	..	8	13
Mortality	..	22%	28+%
Dec. 10, 1891, to Feb. 1, 1892	..	81	20
Deaths	..	34	40
Mortality	..	39%	37%

Looking from another point of view at the returns to the city authorities of the deaths from pneumonia and bronchitis, I find the following: the average of deaths from pneumonia for the month of December in the five years 1884-88, was 104; in December, 1889, the deaths were 160; in December, 1890, 100; and in December, 1891, 223; the average for the five Januaries, 1885-89, was 118.6; in January, 1890, the number was 335; in January, 1891, it was 139; and in January, 1892, 240.

In the same way for bronchitis, the average of five Decembers was 54.8; the number for December, 1889, was only 48; for December, 1890, 49; and for December, 1891, 90. For the five Januaries the average was 53.2; for January, 1890, the number was 89; for January, 1891, 48; and for January, 1892, 109.

Before tabulating the total cases of pneumonia (meaning thereby croupous pneumonia) entered at the two hospitals between December 10 and February 1, 1890-91, 1891-92, I was curious to see the proportion of cases in each. I got the following result shown in Table III bis, which includes both croupous and catarrhal or broncho-pneumonias — the number

of the latter being small—ten in all for the two years, at both hospitals.

The great increase in the number of cases, as well as in the number and percentage of deaths this winter, comes largely, therefore, from the City Hospital; and there also the proportion of males was larger—sixty-five males to thirty-two females, while at the Massachusetts there were twelve males to eight females.

TABLE IV.

Analysis of all Cases of Lobar Pneumonia admitted to the Boston City and Massachusetts General Hospitals, from Dec. 10, 1890, to Feb. 1, 1891, with Reference to the Precedence of Gripe Symptoms, Localization, Complications, and Termination—Lysis or Crisis, or Death.

	Preceded by gripe symptoms	Not preceded by gripe symptoms	Doubtful	No history	Total
Total, number	55	36	26	10	127
" per cent.	43	29	20	8	100
Single lobe, number	39	17	14	6	76
" per cent.	71	47	54	60	100
Unilateral, more than one lobe, " per cent.	6	11	4	2	23
Double, number	11	31	19	40	90
" per cent.	10	8	7	25	100
Complicated, number	13	11	14	5	43
" per cent.	24	23	33	50	100
Recovery by crisis, number	15	7	3	2	25
" per cent.	44	41	21	..	100
Recovery by lysis, number	19	9	11	5	44
" per cent.	56	36	79	100	100
Death, number	11	11	8	5	38
" per cent.	20	39	39	50	100

December 10, 1890, to February 1, 1892.

	Preceded by gripe symptoms	Not preceded by gripe symptoms	Doubtful	No history	Total
Total, number	28	61	1	11	101
" per cent.	27	69	1	11	100
Single lobe, number	22	48	1	9	80
" per cent.	80	80	100	80	100
Unilateral, more than one lobe, " per cent.	2	12	..	1	11
Double, number	4	5	..	1	10
" per cent.	14	8	..	1	10
Complicated, number	6	20	..	6	32
" per cent.	21	33	..	50	100
Death, number	11	21	1	6	38
" per cent.	40	34	100	50	100

December 10, 1890, to February 1, 1892.

Table IV gives an analysis of the cases of pneumonia in the two hospitals—the extent of the process, the complications and the mortality—with reference to influenza antecedents as gathered from the records.

I have not attempted to include recoveries by crisis and lysis, partly because the dividing line is very uncertain, and partly because the charts in many cases had not been entered and were not easily accessible. The results of this analysis differ materially in several important particulars—and especially as to the percentage of pneumonias preceded by influenza-symptoms—from those of a similar analysis of hospital cases in the previous epidemic published in Dr. F. C. Shattuck's paper.

The difference is probably due more to a difference of record-keeping or record-interpretation than to so great an actual difference in facts. Of the total pneumonias only 27 per cent. are recorded as preceded by influenza; 60 per cent. were not entered as preceded by such symptoms, and one per cent. doubtful. This compares with 43 per cent. preceded by such symptoms in the previous epidemic, and only 49 per cent. not preceded or doubtful.

The percentage of complications was about the same for the two epidemics, and the only other marked difference appears in the mortality which has already been alluded to.

TABLE V.

Lobar Pneumonia in Boston City Hospital and Massachusetts General Hospital, December 10, 1890, to January 31, 1890.

Age.	Cases.	Male.	Female.	Fatal.
10 and under	2	2	0	0
10 to 20	14	5	2 (14% +)	2
20 to 30	41	13	7 (17% +)	17
30 to 40	31	6	10 (32% +)	10
40 to 50	16	12	4 (25% +)	4
50 to 60	13	9	4	7 (54% -)
60 to 70	1	1	0	1
70 to 80	1	0	1	0
Unknown	8	8	0	3
Total	127	94 (74%)	35 (26%)	38 (30%)

December 10, 1891, to February 1, 1892.

Age.	Cases.	Male.	Female.	Fatal.
10 and under	1	1	0	0
10 to 20	5	5	0	0
20 to 30	23	26	17	18 (24%)
30 to 40	23	17	6	9 (29% +)
40 to 60	9	5	4	5 (55% +)
60 +	9	7	3	7 (40% -)
Total	101	71	30	39 (39% +)

The upper half of this table shows the age and sex of 127 hospital cases. Nearly 75% were males, and the mortality increased with each decade up to the fifth, remaining stationary thence to the seventeenth.

Table V gives the age and sex of the 101 hospital cases. The percentage of males was rather less than in the previous epidemic, 70+% compared to 74+%, and of females 30% compared to 26%. There were no deaths under twenty years of age, and only five cases, all of which were in males. The mortality increased pretty constantly in the next three periods of twenty years.

TABLE VI.

Fatal Pneumonia and Broncho-pneumonia reported at the Boston City Hall. Comparison between December, 1890, and January, 1891, and the average of the same months during the previous five years, with reference to age.

Age.	Avg. deaths Dec., 1884-8.	Deaths, Dec., 1890.	Per ct. of in- crease.	Avg. deaths Jan., 1885-9.	Deaths, Jan., 1891.	Per ct. of in- crease.
10 and under	36.2	37	..	36	56	55
10 to 20	2.6	3	..	4	11	29
20 to 30	8	26	225	8.8	43	388
30 to 40	10	22	120	17	54	218
40 to 50	11.8	28	137	15.6	57	275
50 to 60	11.4	18	58	11.8	50	324
60 to 70	12.2	15	34	13	38	132
70 to 80	9	8	..	10.2	28	155
80 to 90	3.8	3	..	2.2	13	500

Comparison between December, 1890, and January, 1891.

Age.	Deaths, Dec., 1890.	Per cent. of in- crease.	Deaths, Jan., 1891.	Per cent. of in- crease.
10 and under	60	65	44	22
10 to 20	2	..	0	..
20 to 30	13	63	22	100
30 to 40	23	130	29	73
40 to 50	22	86	32	105
50 to 60	21	84	26	120
60 to 70	32	186	41	215
70 to 80	28	211	31	241
80 to 90	22	479	14	536
90 to 100	1	..	1	..

Table VI analyzes the deaths from pneumonia and broncho-pneumonia, as reported to the city authorities, with reference to age, and compares the deaths in December and January, 1891-92, with the same months in 1889-90, and the average of the previous five years.

There was an increase in deaths over the average deaths in December for every decade except one (10-20) up to 100, this increase culminating in the decade between 80 and 90 with 479 per cent. In December, 1889, there was no increase under twenty or over seventy, at other ages there was a marked increase over the average, but a less increase for every decade except two, 20-30 and 40-50, than in December, 1891.

In January, 1892, there was a large increase over the average for every decade except one, 10-20 — when there were no deaths — culminating in an increase of 536 per cent. in the decade 80-90, which compares with 500 per cent. increase for the same decade January, 1890; for the earlier decades the increase was smaller for January, 1892, than for January, 1890, but it was larger for the very old, that is the three decades 60-70, 70-80, and 80-90.

The very small number of deaths from pneumonia and bronchitis between the ages of 10 and 20 years in the city returns for any year is very striking.

The city returns, it may be remarked incidentally, show five deaths from bronchitis and pneumonia between the ages of ninety and one hundred in December, 1890-91, and January, 1891-92.

TABLE VII.

Fatal Bronchitis reported at the Boston City Hall. Comparison between December, 1889, and January, 1890, and the average of the same months during the five previous years, with reference to age.

Age.	Average deaths, Dec., 1884-8.	Deaths, Dec., 1889.	Average deaths, Jan., 1885-9.	Deaths, Jan., 1890.	Per cent. of increase.
10 and under	37.2	23	36.8	29	..
10 to 20	0.6	1	0.4	3	650
20 to 30 . . . . .	..	..	0.2	2	900
30 to 40	1	3	1.4	3	114
40 to 50	1.4	..	1.4	5	256
50 to 60	4.8	4	2.4	8	231
60 to 70	6	5	3.4	13	222
70 to 80	2.4	4	5	13	160
80 to 90	1.4	3	2.6	13	409

Comparison between December, 1891, and January, 1892.

Age.	Deaths, Dec., 1891.	Per cent. of increase.	Deaths, Jan., 1892.	Per cent. of increase.
10 and under	42	13	6	..
10 to 20	1	83	0	..
20 to 30	2	..	3	1,460
30 to 40	1	0	6	329
40 to 50	6	324	1	166
50 to 60	9	871	9	275
60 to 70	12	100	13	282
70 to 80	15	525	17	240
80 to 90	3	114	14	438
90 to 100 . . . . .	..	..	1	..

Table VII analyses bronchitis reported to the city, as Table VI did pneumonia, with reference to age. Deaths from bronchitis in December under ten years were increased slightly, in January there were none under twenty years; in December and January, 1889, 1890, under ten years they were less than the average, for all the other decades, except one, for both months there was irregular but considerable increase. The numbers, however, in all three years were too small to be of much value.

Having compared my figures for the present epidemic and the one free year with those published in my brother's paper for the previous epidemic and for the five free years, we will see how the conclusions to

which my figures lead, compare with those to which his figures lead him.

He says: "Conclusions can be drawn, but they do not seem to me of such a nature as to throw any really new light on influenza pneumonia." With this statement I fear I must agree. The conclusions are as follows:

"(1) Pneumonia was unusually prevalent in Boston during the height of the influenza epidemic, about the middle third of the visitation." My figures indicate that it was unusually prevalent this winter, too, but reached its culmination a week earlier.

"(2) The statistics of the Pacific Mills indicate that less than a half per cent. of those severely attacked by influenza acquired pneumonia.

"(3) Broncho-pneumonia was rare in the hospitals." I find only six cases in both hospitals this winter.

"(4) The pneumonia mortality rate was probably not increased, perhaps diminished, as compared with that of the five previous years." For this epidemic it was increased eight per cent. over the previous epidemic and five and one-half per cent. as compared with the average of six free years.

"(5) The number of cases of pneumonia not preceded by grippe symptoms was about the same as the number of pneumonias in an average year." The number was apparently greater than the number in an average year.

"(6) Pneumonia followed grippe in so large a number of cases as to show some sort of connection between the affections." In a sufficiently large number of cases.

"(7) In sixty per cent. of the cases a single lobe only was involved." In eighty per cent.

"(8) Two-thirds of the cases terminated by lysis."

"(9) Pneumonia was three times as frequent in males as in females, and the mortality rate increased with each decade." Two and one-third times.

"(10) The most striking increase in the urban deaths from pneumonia was, on the whole, between the ages of twenty and sixty and eighty and ninety. The increase under ten was slight." The increase in the urban deaths from pneumonia was greatest between the ages of sixty and ninety; it was striking, but evenly distributed between twenty and sixty; under twenty it was slight.

"(11) The gross appearances in nine cases examined after death were not specially noteworthy." Autopsies not considered.

Dr. Pepper's estimate from returns made to him by a large number (272) of practitioners in Philadelphia, of the relative proportion of croupous and catarrhal pneumonias, differs greatly from the results afforded by our hospitals. These returns indicate that the catarrhal were almost twice as frequent as the croupous. He further states that Dr. DaCosta and he saw about an equal number of catarrhal and croupous pneumonias in consultation. He notes as a peculiarity of the pneumonias during the epidemic season 1889-90 the large preponderance of cases affecting the right lung, which he estimates was affected twice as often as the left. Of 101 hospital cases in Boston from December 10th to February 1st, this winter, the right lung alone was affected in 57½%, the left alone in 32½%; but I find that of 44 cases for the same period last winter, when there was no epidemic of influenza, in 53% the right alone was affected, the left alone in 33%. Osler reports that in 100 pneumonia autopsies at the Montreal

General Hospital, not made during an influenza epidemic, the right lung was affected in 51%, the left in 32% and both in 17%. Of last winter's hospital cases in Boston 14% were double, and this winter's only 10%.

TABLE VIII.

Amount of Lung involved and region affected.	Dec. 10, 1890, to Feb. 1, 1891.						Dec. 10, 1891, to Feb. 1, 1892.						Total both years.				
	Total Cases.			Per cent.			Total Cases.			Per cent.							
		Apx.	Delirium.		Apx.	Delirium.		Apx.	Delirium.		Apx.	Delirium.					
Right lung alone . . .	23	53	5	8	12	6	58	57	16	11	11	23	81	21	19	23	29
Left lung alone . . .	15	33	3	4	8	4	33	32	2	9	5	10	48	5	13	13	14
Double	6	14	2	5	3	3	10	10	0	4	2	6	16	2	9	5	9
Whole of one lung . . .	2	...	2	2	1	1	11	11	...	6	2	7	13	...	8	4	8
Apex	10	23	6	5	18	17	...	5	6	9	28	...	11	11	14		
Broncho-pneumonia, 4	0	1	0	6	...	0	0	2	10	...	0	1	2				

Dec. 10, 1890, to Feb. 1, 1891, 44 cases. Dec. 10, 1891, to Feb. 1, 1892, 101 cases. Both years, 147 cases, including two of doubtful location.

Though not coming strictly under my subject, curiosity and a desire to make use of my figures led me to look into the question of apex pneumonia,—especially as I have for some time been sceptical of the current statement that it is more apt to be accompanied by delirium. In 18 apex pneumonias (17% of the total) of the influenza period, there were 9 deaths, or 50%; but 6, or 33%, were of markedly alcoholic habits, and only 5, or 28%, exhibited delirium. One case, notwithstanding the apex and the alcohol, was not delirious and got well. One case of double apex died two days after entering the hospital, this is not included. Last winter in 10 apex cases (23% of the total), five died, five had alcoholic habits, and six were delirious; that is, one only was delirious without being alcoholic.

In regard to his returns for the 1889–90 epidemic, Pepper says: "There was also an unusual proportion of cases of apex pneumonia where the entire upper lobe was completely consolidated without implication of any other part. As usual in such cases, there seemed to be a special predominance of cerebral symptoms."

Among the complications were inflammations of the ear of various degrees of severity, erysipelas, rheumatism, tuberculosis, empyema, cardiac lesions and pericarditis, melancholia, acute mania, meningitis, alcoholism, cerebral embolism, erythema, etc.

One young woman entered my service at the City Hospital with undoubted influenza. She developed an erythema of the face, then a pneumonia; she then miscarried at the fifth month; she then developed diphtheria; and she subsequently recovered her health perfectly.

I had intended to say something about the vague symptoms and ill-defined physical signs observed in some cases of pneumonia during the influenza, but I have already taken up too much of your time.

I hope some of you will favor us with your personal experiences as practitioners; some I know have seen comparatively little pneumonia this winter and others more than usual.

To sum up briefly, I should incline to the opinion that pneumonia was a sequel rather than a concomitant

or complication of influenza. Though I acknowledge that the tables presented do not offer alone sufficient support for this view.

Pepper takes this position in the following words: "The vast majority of pneumonias occurred as a sequel, rather than a complication, and they were clearly traceable to exposure to damp and raw weather while the patient had a relaxed system and while slight pyrexia persisted after the subsidence of the more marked symptoms of his influenza. Experience furnishes many instances of this fact."

Ostler, in his "Practice of Medicine," just published, speaks of pneumonia as a *complication*, and the most serious and fatal one of influenza; but at the same time states that there is, as far as his observation goes, nothing special or peculiar in the character of the pneumonia.

Through the courtesy of Drs. Mason and Folsom at the City Hospital and of Drs. F. C. Shattuck and W. W. Gannett at the Massachusetts General Hospital, I have had access to their cases; and I have to thank Dr. A. C. Jelly and my house-officers, Drs. Dudley and Towle and Mr. Edson, for assistance in abstracting the records, and the Boston Board of Health for figures furnished. My use of Dr. F. C. Shattuck's tables speaks for itself. As they were originally published elsewhere, their reproduction here commends itself additionally.

A CASE OF DOUBLE MOVABLE KIDNEY.¹

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So far as I can learn, the following case of double movable kidney is the first which has been diagnosed during life, and verified by operation, in America. It is therefore well worthy of especial record.

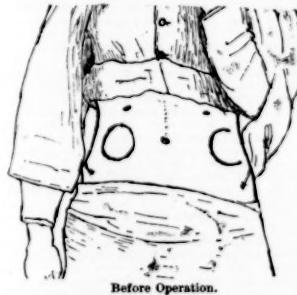
A. B., twenty-seven years of age, unmarried, entered the City Hospital on May 11, 1891. She had had no children nor miscarriages, and no diseases. The catamenia were regular but scanty. She had been subject to headaches for the last ten years, and during the last three years they had increased in severity and frequency, especially lately. The pain was described as throbbing, and was localized in the frontal and parietal regions. It was sometimes accompanied by nausea and vomiting, which was not believed by the patient to be dependent upon food. An examination of the eyes was negative.

In December, 1890, she says she felt something "shaking in her abdomen when she walked"; and near the end of the same month she experienced a sensation as if something slipped forward into the left inguinal region when she stooped over. In the latter part of January she fell violently upon the ice, in a sitting posture. At this time she noticed a resistant mass in the left inguinal region, and shortly afterward a similar one in the right. She paid but little attention to them, however, until three weeks later, when they became painful. She said they had always been movable. The pain was influenced by position and motion. It was absent when she lay quietly in bed, but returned when she moved. It was most intense when she sat down, and was referred to both inguinal regions, coccyx and back. Walking was more painful than standing. Stooping increased the pain and caused a sensation as

¹ Read before the Boston Society for Medical Improvement, February 22, 1892.

if "something were being squeezed." Reaching upwards with her right hand, caused pain in the left side; a similar movement of the left hand caused none. Coughing and laughing were painful. In addition, she complained of a feeling of weight in the abdomen.

Three or four months ago she was troubled with frequent micturition, accompanied by some pain, and lasting about a month. She has had occasional attacks of palpitation, and dyspnoea on exertion, and dizziness. The bowels were constipated. The patient was of a nervous temperament. Temperature 98.8°, pulse 80, respiration 24. An examination of the urine, on May 12th, showed: color normal, acid reaction, specific gravity 1027, clear, with a flocculent sediment, no albumen. Examination of the abdomen revealed in the right lumbar region, a tumor which was firm, oval in shape and apparently three inches by two in size, moderately tender on pressure, easily movable from the crest of right ilium, upwards under the ribs, in the axillary line; from which position it was forced downwards by coughing or deep inspiration. In the left lumbar region a tumor was felt, similar in every respect except that it was larger. Both tumors were more plainly felt when patient lay on her face or side and in the half-prone position. Percussion over the back in both lumbar regions gave resonance when the patient lay on her face.



Before Operation.

The patient was kept under observation in the ward for some weeks; at times she was confined to the bed, and at others was allowed to get up and go about, doing a little light work. Her general health improved but her symptoms continued.

In addition to other symptoms, the patient complained of much pain in the region of the coccyx, on sitting. An examination showed that it was deflected to one side, and she was transferred to the surgical side of the hospital for operation. This was performed by Dr. Gay on July 7th. The coccyx was removed and the patient made a good recovery. This was followed by a diminution of the pain caused by sitting. Later, various kinds of apparatus were tried to retain the kidneys in position but without success, and it was finally decided to perform the operation of nephro-rhaphy on both kidneys.

The first operation was performed by Dr. Burrell on September 22d. An incision was made in the lumbar region on the left side, at the outer border of, and parallel with, the extensor muscles of the spine; the dissection was carried down to the kidney and silk su-

tures were passed through the capsule of the kidney and the quadratus lumborum muscle binding them firmly together. The wound was thoroughly irrigated, packed lightly with gauze and dressed antiseptically. The patient made a good recovery.

On November 7th the second operation was performed by Dr. Bradford. An incision four inches long was made in the lumbar region, in the back, over the right kidney; extending from the lower ribs, downwards, at a distance of about six inches from the vertebral spines. The dissection was carried down to the kidney and three sutures were taken through the capsule, at the upper, middle and lower parts; these sutures were carried through the muscular substance to the outer edge of the wound and an antiseptic dressing was applied after thoroughly irrigating.

The patient was discharged December 28th in good general condition and with the wounds healed.



After Operation.

The urine chart kept from September 7th until her discharge from the hospital, showed an average daily amount of about one-half the normal quantity and at times even less.

On February 6th the patient re-entered the hospital on account of a slight discharge occurring from the right side. The examination showed one or two granulating points in the right cicatrix, into one of which a probe entered about one and one-half inches. An incision was made and a silk suture was found at the bottom and removed. A slight swelling on the left cicatrix was also opened, and a silk suture was removed.

On February 22d the patient was discharged with one side entirely healed and the other almost so.

I examined the patient on February 21st and found both kidneys in position. She complained of various nervous aches and pains, but the nausea, sense of weight in the abdomen, and headaches were relieved.

I have prepared a reference list of the cases which have been operated upon, and which is as nearly complete as the literature on the subject can make it. Dr. Landau of Berlin, and Sulzer of Basel, have written excellent papers on this subject, and I am indebted to their tables for many of the cases in my list.

One thousand three hundred and thirty-two cases of movable kidney have been collected; of these 107 occurred in males and 702 in females, that is, 86 per cent. were in females. Six hundred and sixty-eight were of the right kidney, 106 of the left kidney, and 93 of both kidneys, that is, about 77 per cent. were of the right kidney alone. This preponderance of the right over the left in lists of movable kidneys seems to be confined to females, for out of 14 cases occurring in the male sex, where the special kidney was mentioned, the right kidney was affected in six, and the left in eight. A similar list among females showed that in 80 the right was affected, in 15 both, but in only 10 the left alone. Seventy-two cases of movable kidney were first recognized, or the diagnosis confirmed, on the post-mortem table.

Although movable kidney is sometimes congenital, it is not often recognized in children. Phillips reports a doubtful case in a boy of nine years. Heirsprung reports another case in a child, and Durham mentions a case of misplacement of the left kidney in a fetus. Sulzer has collected 37 nephrectomies for movable kidney with 10 deaths. His table of nephrraphies for movable kidney is very complete, and contains 80 cases with only two deaths; 45 of these cases were entirely cured; seven were improved. In nine there was no improvement in the symptoms notwithstanding the success of the operation, and in 13 the operation did not succeed in permanently fixing the kidney. Nephrraphy of both kidneys has been performed by Hahn and also by Küster (quoted by Lindner.)

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THE ESSENTIALS TO SUCCESS IN REPAIR OF THE PELVIC FLOOR IN PRIMARY AND SECONDARY OPERATIONS.¹

BY EDWARD REYNOLDS, M.D.

In this brief paper, I do not propose to touch at all upon the anatomical aspects of laceration of the perineum, except in so far as is incidental and necessary to a proper consideration of the conditions which determine success in its repair; but mean to confine myself mainly to certain aspects of this problem which, though now almost universally accepted by specialists, are as yet insufficiently realized by at least a large proportion of general practitioners. I wish first to enumerate the characteristics which are generally ad-

mitted to be essential to a successful suture, and which are common to all successful methods.

It was for a long time believed that laceration of the vaginal outlet was a tear of that supposed supporting structure, the perineal body, in the antero-posterior median plane of the body. It is only within the last few years that another and more satisfactory description has been given.

In 1883, Dr. Emmett, the father of perineorrhaphy, first announced the belief, now generally held, that for mechanical purposes the perineal body is a myth; and that the true reason for the loss of support which follows these tears, is to be found in their destruction of the integrity of the muscles and fascia of the pelvic diaphragm.

In connection with his publication of a belief in this new pathology, he described a new method of introducing the sutures; which was essentially an abandonment of the old idea that the separated tissues were to be brought together from side to side, and an acceptance of the principle that the essential characteristic of all successful methods is the approximation of the torn surfaces from above downward, and from without inward to the median line.

In a recent address, he has stated that the success of his earlier operations was in fact due to their incidental possession of the longitudinal traction, which is now admitted to be the main object of the operation, and he, in common with other gynecologists, now holds that the approximation of the tear from side to side, which is undoubtedly secured by any method of suture, is an incidental and far less necessary matter.

As the tears undoubtedly present themselves under various forms, I wish at this point to exhibit a series of diagrams which were drawn from life for me by one of the house-officers of the Boston Lying-in Hospital, and published in a paper upon the anatomy of the lacerated perineum, which I wrote for the last meeting of the American Gynecological Association.²



FIG. 1.

These figures illustrate an attempt to classify all the forms of tear which are observed in practice, as modifications of one type form, which is illustrated in the first figure. The paper for which these diagrams were originally made was an attempt to present a theoretical and mechanical proof for the necessity of approximating the tissues from above downward; but for practical purposes, a better demonstration is to be found by a consideration of the results of proper and improper methods of suture. When the sutures are inserted in such a way as to approximate the tissues from side to side, it is a matter of common observation that the result produced is substantially that which I have endeavored to represent by Figure 1, in which the line of union is narrow, and its external surface is

¹ Read before the Boston Society for Medical Improvement, February 22, 1892.

² Trans. American Gynecological Association, 1891, vol. xvi, p. 308.

almost at right angles to the lower portion of the posterior wall of the vagina. The anterior and posterior vaginal walls are but partially supported by such a result; the formation of the rectocele and cystocele goes on; the skin of the perineum so formed soon stretches and yields, and nothing has been accomplished by the operation.



FIG. 2.

When, upon the other hand, the tissues are systematically drawn together from above downward and from below upward, the form of result in well managed cases is that which is diagrammatically represented in Figure 2. The resulting surface of union is broad and deep; the external surface slopes upward and forward to form a genital furrow which is closely similar in shape to that of the normal or unaltered vulva; the posterior vaginal wall is thickened, and its anterior surface forced forward, until it is brought in contact with the anterior wall, to which it furnishes a firm support.

Such a union results almost invariably in the disappearance of sub-involution of the vagina and the arrest of the prolapse of the vaginal walls. By it the pelvic fasciae are again put upon the stretch, and converted into a firm occluding curtain for the support of the superimposed viscera; so that it may be said that the essential criterion by which the result of a perineorrhaphy should be judged, is that the fourchette of the new perineum should not only be sufficiently close to the lower edge of the symphysis, but should be upon approximately the same level with it, and that the sigmoid curve of the vagina should be fully restored.

If this result is attained, the precise method by which the sutures were introduced is a matter of unimportance; and the choice between the many methods which afford the essential requisite of drawing the tissues together from above downward, is one which depends upon the rapidity and ease with which the stitches can be introduced, rather than upon any other quality. This choice must always depend, to a certain extent, upon the idiosyncrasies of the individual operator; but it must also be regulated, both by the peculiarities of the individual case, and by the time at which the operation is undertaken.

The distorted condition of the tissues immediately after labor renders the more detailed and exact methods difficult of application; and the fact that the tissues at this time have not been distended and altered by the production of rectoceles or cystoceles, renders the adoption of such exact methods unnecessary; while, upon the other hand, the rough and ready approximation which yields excellent results in primary operations, would be entirely insufficient for a successful secondary repair.

For these reasons, I am inclined to advocate a considerable difference in the methods which should be pursued in primary and secondary operations. After

a considerable experience in the suture of the perineum immediately after labor by both methods, I have been led to believe that the attempt to approximate the whole surface of the tear with the accuracy which is necessary at a later period, is apt to lead only to distorted results; that is, to the suturing together of parts which were never separated from each other; and that the result is likely to be better if the tissues as a whole are drawn into moderately close approximation, and their exact arrangement against each other left to nature, and thus trusted to the forces of retraction and re-arrangement to which their whole substance is subjected during the few hours which follow delivery. It is, moreover, important that the method selected for use immediately after delivery should be one which permits the operator to act with a minimum of assistance.

The method which I myself pursue, and by which I am accustomed to attain, I think, upon the whole, better results than I formerly secured by more elaborate procedures, is as follows: A large, fully curved needle is threaded with silk or catgut, the second finger of the left hand is introduced into the rectum, and the forefinger of the same hand into the vagina. For a long time I employed the old-fashioned, large, fully curved surgical needle of our fathers, but of late have learned to prefer a delicate Hanks-Pearse needle, which I will pass about. The needle is then made to penetrate the skin at a point well out towards the left side of the patient's perineum, at least a third of an inch from the edge of the tear, and about opposite the antero-posterior edge of the anus; it is carried upwards and inwards with a wide sweep, entirely buried in the tissues, under the guidance of the first and second fingers of the left hand, until it crosses the median line at the point where the thicker perineal body is beginning to merge in the thin recto-vaginal septum, and is brought downward with the same wide sweep, to emerge exactly opposite to its point of entrance.

A second suture is introduced in the same manner, at the same distance from the lateral edge of the tear, and at a point which is, antero-posteriorly, half-way between the anus and the fourchette; and is carried upward to about the same point in the recto-vaginal septum. A third is introduced in the same manner, and with the same width and height, at a point about opposite, or, if anything, anterior to the situation of the fourchette.

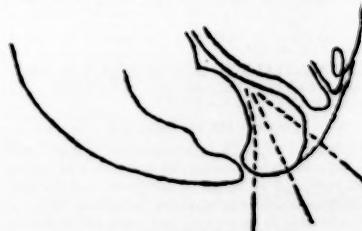


FIG. 3.

The relation of these three sutures to the tissues of the outlet, is shown diagrammatically in median section in Figure 3. When they are drawn together from side to side with moderate firmness, the edges of the tear in the median line are rolled inwards, and

disappear upwards out of sight; and on examination with the finger, it will be found that the introitus is of proper narrowness, and the sigmoid curve of the vagina fully restored.

In spite of the apparent roughness of the approximation, I have been accustomed to see it followed in the primary operation by most excellent, and even artistic-looking, results. In exceptional cases, in which the lateral prolongations of the typical Y-shaped tear extend so far up the vagina as to be necessarily crossed by these stitches, it is well to bring their ends together by a few running sutures, such as are to be described in the secondary operation; but my experience with a number of extremely prolonged tears, in which the approximation was necessarily rendered imperfect by lack of assistance, and with one extraordinarily long unsutured tear which I had the pleasure of seeing with Dr. E. J. Forster in the gynecological wards of the Boston City Hospital, to which she had been referred for the secondary operation, leads me to believe that the upper portion of these wings of the tear are likely to heal equally well without suture, provided that the lower portion is well repaired — a phenomenon which I may say, in passing, I believe can be readily explained upon mechanical and anatomical grounds.

For the secondary operation, there are three methods which are so generally applicable, and so readily and easily performed, as to be worthy of special mention.

First of these is Mr. Tate's flap-splitting operation. This possesses the important advantage that, when it is applied to late and difficult cases, it sacrifices no tissue whatsoever, and secondly, does not increase the difficulties of a second operation, should the first prove unsuccessful. By it the tissues which have been separated from each other, are brought much more nearly into apposition with each other than would at first sight be considered possible. It is valuable for cases in which the amount of tissue at the disposal of the operator is extremely small, and in which it is necessary to utilize cicatricial tissue, the capacity of which for firm union cannot be wholly trusted. In the majority of cases, it has seemed to me less useful than the methods in which the freshened surface is supplied by denudation.

The purse-string method has been highly recommended by many eminent and experienced operators. When this is adopted, an approximately oval surface is denuded, with its long axis transverse to the vagina, and the freshened surface, when made, is encircled by one or more sutures, which follow its contour, and which when drawn together, pucker up its large circular edge to a single point. I have had no experience with this method in perineal plastics, and can offer no opinion of value upon its merits. Upon theoretical grounds, it would seem to sacrifice accuracy to rapidity; yet I have no doubt, upon theoretical grounds again, that it would furnish, at least, fairly good support; and, as was said before, it has been highly recommended.

The third method to which I propose to refer, is that of Dr. Emmett, which is, however, modified by almost every operator, to suit his individual convenience and peculiarities.

For the proper performance of this operation, it is essential that the denuded area should be of exactly the right extent; and it will, perhaps, be well for me to give here a repetition of Dr. Emmett's directions for the determination of this point.

A tenaculum should be introduced into the last caruncula upon each side of the vulva, and these should be drawn upward, forward, and to the median line, by an assistant, while the operator engages another tenaculum in the median line of the posterior wall, at successively higher and higher points, until he reaches the highest point which can be drawn sufficiently far downward to meet the caruncula, when these are drawn as far up as is possible without leaving the median line. Each of these three points should then be marked by a snip from the scissors, when by bringing together successively each caruncula, and the marked point upon the posterior wall, two lateral folds or troughs will be formed, which, when their bottoms are depressed by a probe, will mark the limits of the lateral wings of the denuded surface.

The essential points in the insertion of the stitches, are that the bottom of each of the coaptation sutures should be much nearer to the median line than its points of insertion and emergence: that they should be tied in successive order from without inwards towards the median line, and that the purse-string or supporting suture, which is introduced after the others have been tied, should be passed with a wide sweep, and should pass transversely above the new-formed perineal body.

The modification of this suture which I myself employ in secondary operations, and which I believe to be as accurate as any other, and more rapid than most, is as follows:

The coaptation of the horns of the crescent is secured by a running suture, beginning at the end of the horn, and working inward; but the needle, with the free end of the thread, is carried through the preceding bight after each emergence from the tissues, in order to secure the same accuracy of adaptation which is obtained by uninterrupted sutures. I then insert two purse-string sutures, which are exactly similar to the first and third sutures which I use in the primary operation, with the single exception that they are introduced close to the edge of the tear, and then swept outward as they ascend, in order to minimize their cutting effect upon the external skin; and this I think permissible because the infolding of the median line has here been secured by the internal sutures. In primary operations, I habitually employ silk sutures, though I have uniformly obtained equally good results with catgut. In the secondary operations, I am accustomed to employ catgut for the internal sutures, and stout silver wire for the external or purse-string stitches, using the latter material for these two last stitches, because I wish to feel certain that these, at least, will preserve their integrity until after the bowels have moved; and also because, if they become relaxed by the subsidence of swelling, or by cutting through the tissues, I am accustomed to tighten them up immediately before the bowels move for the first time, and thus prevent the possibility of direct strain upon the newly-united tissues during the performance of this function.

Whichever method may be chosen, I am confident that when the profession as a whole has been sufficiently impressed with the idea that the restoration of the sigmoid curve of the vagina, and of the normal upward inclination of the genital furrow, by traction upon the tissues from above downward, and from below upward, is the only thing essential to success in the restoration of the lacerated pelvic floor, the number of

improper and useless operations, which are still constantly brought under the observation of every one interested in gynecology, will be greatly decreased, if not altogether done away with.

Clinical Department.

A CASE OF CEREBELLAR TUMOR, WITH AUTOPSY.

BY MORTON PRINCE, M.D.,
Physician for Nervous Diseases, Boston City Hospital.

The following case is here put on record, as it is desirable that all such cases should be recorded as contributions to symptomatology. It also presents one or two practical points bearing on the question of operation in cases of cerebellar tumor which are of interest.

When first seen by me, a little over a year from the beginning of the symptoms, the patient complained principally of intense headache, and of difficulty in walking, owing to a tendency to tumble. These were the salient symptoms. When first taken ill he suffered from nausea and vomiting, but had had neither for a year. The staggering was characteristic, I thought, of cerebellar ataxia. While there was no paralysis, he walked with great difficulty and caution. It seemed as if he tended to tumble to the left at this time, but this tendency could not be said to be very pronounced (the tumor was in the right lobe).

The headache which came on in paroxysms and was very severe, was located sometimes in the occipital region, sometimes in the frontal and sometimes "all over the head." The pain was described as terrible and accompanied by a bursting feeling.

He could with difficulty stand or walk without support. Although he said he felt generally weak his muscular strength was good.

Examination of the eyes by Dr. Wadsworth showed "a little indistinctness of outline of inner two-thirds of the disks, but nothing which may not be physiological; in other respects normal."

About ten months previously (December 18, 1890) the patient had entered the City Hospital. He stated, and the records substantiate his statement, that his condition at that time was about the same in kind as it was when he was first seen by me, but less severe in degree. His symptoms were vertigo, intense headache, ataxia, increased patellar and elbow reflexes. The records state that he was easily excited to tears, and could not stand with his feet together and eyes closed; that he fell to the right. The headaches, which were intense, were controlled by hydro-bromate of caffeine. There was no history of syphilis.

October 7, 1891. I recommended him for admission to the service of Dr. Bolles, with the view of trephining for the relief of the headache if it could not be controlled by medical means. It so happened that relief was obtained by caffeine, so this operation was not required. The question of operation for the removal of the tumor, which was correctly diagnosed and localized as cerebellar, was entertained and discussed at different times. The mental symptoms were quite marked and were suggestive of disease of the frontal lobes. His memory was very poor; he was emotional, easily moved to tears, and rather weak-minded.

His symptoms steadily and somewhat rapidly in-

creased in degree; and to them were added incontinence of bladder and bowels, in consequence of which he required continuous attention.

On November 9th he was discharged to his home, and died three days later.

The autopsy was made by Dr. C. M. Chamberlin, of Lawrence, who has kindly forwarded the specimen to Dr. Fitz and furnished the hospital with a statement of his findings. The right lobe of the cerebellum was occupied by a cyst about the size of a hen's egg, filled with pale limpid serum. The middle lobe was not involved, but might easily have been, and probably was compressed by the growth.

Dr. Whitney who has kindly examined the specimen for me, reports:

"The specimen consisted of the cerebellum with the pons and medulla attached. The under side of the left hemisphere of the cerebellum was occupied by a cyst measuring about six centimetres in its greatest diameter. The cyst was lined with a relatively smooth, firm, yellowish-white membrane, easily separable from the cerebellar substance, which surrounded it on all sides except the inferior. The substance of the cerebellum was compressed. Microscopic examination of the wall of the cyst showed it to be made up of a fibrous tissue rich in small cells and well vascularized, and in the inferior part the vessels were very abundant, forming almost a true telangiectasis. The inner side of the lining of the cyst contained numerous granules of blood pigment. The cyst has advanced so far that absolute proof of its mode of origin cannot be obtained; but it seems probably to be due to a hemorrhage just beneath the pia mater or in the superficial part of the cerebellar substance."

About seven years previous to the development of his first symptoms the patient, while standing on the top of a moving freight-car, was struck on the back of his head by a bridge. The accident must have been a severe one, for he was knocked unconscious, and remained so probably the greater part of a day and was disabled for some days. His statements varied so at different times regarding the severity of the accident, probably owing to the loss of memory, that more cannot be determined. The question was discussed during his illness, whether or not any close connection between this accident and the final illness was probable. The autopsy would seem to show that a hemorrhage may have been produced at that time, and may have been the origin of the cyst.

As to the feasibility of operation, although I felt there was the highest probability in favor of a cerebellar tumor, I was unwilling to advise an operation, in consequence of the unfavorable results that have hitherto attended this operation. Had I known it to be a cyst, I certainly should have advised it. Only two successful cases have thus far been reported; one of these was a sub-tentorial hydatid cyst and therefore easily emptied. In the other case the tumor was superficial and fixed to the bone.

An element of uncertainty must always attend attempts to remove a cerebellar tumor, owing to the difficulty of locating the growth within the cerebellum; and unless the growth is superficial or the tumor a cyst, the danger of shock must be great. Inasmuch, however, as such tumors are of themselves necessarily fatal, and as there is often a possibility of the growth being a cyst or superficial, it seems to me to be sound surgery to make an exploratory opening in all cases, with

the idea of attempting removal should the conditions be found to be favorable. Considering the frequency with which cysts are found following injuries, it seems to me that such an operation is particularly called for when a previous history of traumatism exists. This, however, should be done before optic neuritis has developed. If the operation had been done in this case it probably would have been successful. Cysts of the lateral lobes, if they can be diagnosed, would seem to be particularly favorable subjects for operation as lesions of these lobes may occur without disturbance of function.

Inasmuch as ataxia is known to accompany tumors of the frontal lobe, a more careful study is needed of the peculiarities of inco-ordination of movement accompanying lesions of different localities. Where optic neuritis is absent and psychic disturbances are present, as in the above case, it may be difficult to distinguish between frontal and cerebellar tumors.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from No. 18, page 46.)

SURGERY OF HYDATID DISEASE.

A. S. LEBRDEFF¹⁸ and I. I. Andrieu's investigations in 1889 are said to prove that daughter-cysts transplanted in the abdominal cavity (experimentation done with rabbits) will continue to grow and multiply. Dr. Sladnitzky¹⁹ has recently confirmed this, and advocates that on that account the strictest precautions should be taken to prevent the escape of the daughter-cysts into the peritoneal cavity when operating on the parent cyst, since by their multiplication they can cause all the disturbance of the original disease. When it is evident that hydatid cysts of the liver have burst into the peritoneal cavity, abdominal section is indicated, for this same reason at once. Exploratory tapping for diagnosis of abdominal hydatids is to be considered allowable only in certain quite exceptional cases.

THE SURGICAL TREATMENT OF INTRA-PERITONEAL TUBERCULOSIS.

Czerny²⁰ makes the following report in regard to the curability of this affection. That tubercular inflammations of some membranes may subside, but the process is so often dependent on adjacent foci (glands, uro-genital tract, *et alii*), that other sequelae must necessarily follow. Pleurisy preceding tubercular bone and joint disease is found (or would be if inquiry was made) of frequent recurrence. When the nucleus of infection is limited and removable, a permanent cure is possible. He reports sixteen cases, comprising operations for ovariotomy, inguinal hernia, enucleation of uterine myoma, resection of tubercular intestine, extirpation of tubercular mesenteric glands, removal of tubercular peritoneum, etc. There were five cures: (1) miliary tuberculosis of the peritoneum, found during an ovariotomy; (2) miliary tuberculosis of the peritoneum, found during an inguinal herniotomy, reported well at end of four months; (3) a resection of a tuberculous

cæcum, well three years later; (4) extirpation of mesenteric gland; (5) tubercular ulceration of cæcum, resection, well fourteen months later. Ten of the fifteen died. The cases are worth careful study. Czerny thinks that for operative purposes there should be a distinction made between the class characterized by firm, tumor-like masses, that is, a dry, adhesive form, and the milky form accompanied by liquid effusion. The latter type is most favorable for operative results. The former has very little encouragement for the surgeon. The latter, by absorption and thickening, may be transformed into the former, as was observed in one of the reported cases. The surgery of the intestinal and lymph-gland tuberculosis is very difficult, and has been little practised; still he thinks his work justifies further trial.

THE "SCHWALBE" METHOD OF TREATMENT OF REDUCIBLE HERNIA.

Mangoldt,²¹ Dresden, has published an interesting review of Steffen's article describing this method. The Schwalbe method consists of the subcutaneous injection of alcohol (twenty to seventy per cent), by means of a Pravaz syringe, with antiseptic precautions, into the ring, as near as possible to the hernial sac; amount two to three grammes; repeated four to fourteen days, according to sensitiveness of patient and amount of reaction; these injections omitted, and recommenced after a pause of eight to fourteen days. Treatment continued till the diffuse thickening and fibrous contraction thus caused has completely closed the ring. The article describes accurately the technique of the method. The duration of the treatment varies from one month to two and a half years or more, according to the age of the patient, the size of the hernia and the diameter of the ring.

Results reported: cured (all varieties) 245 (83.62%); relieved, 19 (6.46%); not cured 29 (9.9%). A "cure" was a hernia, which was relieved so that the patient had worn no appliance for at least six or seven months, and examination by coughing, straining, standing, lying or by invagination of scrotum, was negative. The canal was not always completely closed, but the hernia never recurred, on account of the firm adhesion of the peritoneum around the inner ring. The cases of failure were in fat patients; thin patients with relaxed, flabby tissues, chronic bronchitis and emphysema, very large herniae; and where the treatment was not continued long enough. Recurrences in ten per cent. of cases due to too short treatment, chronic cough and constipation. There is no fatal case reported. One patient has remained cured fourteen years. Steffen claims to cure four-fifths of his cases. The patient does not, when cured, require a truss or bandage. The younger the patient, or the more recent the hernia, the better the prognosis and the shorter the duration of treatment. The results in patients unconfined, with three to seven days' intervals, give quicker results than daily injections of patients confined to bed. If the hernia is easily retained by bandages or truss, occupation may be continued during treatment. In rare cases the alcohol has caused urticaria, dyspnoea, vertigo, intoxication by vegetarians.

HERNIA.

A valuable résumé of the literature, chiefly German, of this subject, has been published by Wagner,²² of Leipzig.

¹⁸ Medical Chronicle, 1889, p. 215.

¹⁹ St. Petersburg Inaugural Dissertation, 1891, No. 22, p. 32. Review. Annals of Surgery, 1891, vol. xiv, p. 260.

²⁰ Beiträge Klin. Chir. 1880, Bd. vi, Hft. 1.

²¹ Schmid's Jahrb. f. gesamt. Med., 1891, 231, p. 275.

²² Ibid., 1891, Bd. 230, p. 167.

zig. The article is too long for more than a very abbreviated report, but some points are of especial interest. In regard to präperitoneal herniae, the following statistics are reported: Total number of reported cases (inguino-präperitoneal) 58; all but one males; ages ten to seventy-four years. The position of the testis was abnormal on the affected side in a majority of cases. Thirty-three cases were right, 14 left, 11 both right and left. Since Krölein's cases were published, there have been 30 cases with symptoms. Treatment: two relieved by taxis, 16 by operation; 12 deaths. In very few cases is the condition recognized before operation. Cruro-präperitoneal type: seven cases, all women; four recoveries; three deaths, in spite of operations, since the inner sac was not recognized.

Diagnosis: History often of importance.

Hernia is usually congenital. There is delayed or incompletely descended testicle. The fact is that symptoms persist after an apparent successful reduction; also that the reduction is difficult, and that the hernia at once recurs in spite of a wide ring, as soon as manipulation is suspended. The tumor is unusually resistant, with pain, marked tenderness and dulness of the adjacent abdominal wall. At times compression of one sac causes increased tension in the other (section of präperitoneal sac followed by fresh gush of fluid).

Differential diagnosis: From internal strangulation of a neighboring loop of intestines, reduction "en bloc," and interstitial (that is, hernia between abdominal muscular planes). In operating, Holder recommends the exposure and opening of the outer sac, then by manipulation, or, if necessary, enlarging the internal ring, the contents is reduced. If this does not render the internal sac attainable, the incision of the abdominal wall must be lengthened till it is exposed. After reduction the sac is excised, after suture of the abdominal ring.

With regard to observation on strangulated herniae, Koch, Nürnberg, reports that when the sac was excised and the stump secured by suture, but other rings were not closed by suture, in 37½% of his cases (No. 17) recurrence took place. Nussbaum operated only when truss treatment was impractical or inefficient. His radical operation was exposure of the sac, taxis, suture of the neck of the sac, its amputation, after which the amputated sac was sutured into the canal and the pillars reunited. He is reported as having from 20% to 25% of recurrences. Gangrenous herniae were excised, and an artificial anus established. He claims that the Schwalbe method (alcoholic injection) can be favorably combined with the open method, and the firm callus about the sac can be produced in a simple manner by use of the Pacquetin cautery.

Wolter reports 387 radical operations from the Hamburg hospital (72 deaths). The technique was as follows: 95 cases highest possible ligation of sac and its extirpation, pillars of ring sutured; 17 cases sac ligated, excised, pillars not sutured; 15 of these cases were femoral; 15 cases pillars sutured, but probably sac also included; in three cases only was the canal opened by incision; 11 cases modified operations; in 24 cases technique not described; in 53 cases the omentum was partly removed; in no case was the testes removed. Results: 58 cases where examination was made at considerable interval after operation, 15 recurrences; a still later investigation showed 41

definite cures. With Schiede, he considers the firmest possible union of the pillars by suture of great importance, and that the excision of the sac is of secondary importance. This view is contrary to that held by many successful operators. He also claims that the use of a truss after operation is no impediment to a permanent cure. He claims never to have seen pressure atrophy, or relaxation of the peritoneum from it, and quotes Schiede as recommending it, except where silver-rim sutures were used.

PRIMARY RESECTION OF INTESTINE FOR GANGRENOUS HERNIA.

Hab's²¹ (Magdeburg) report of 200 herniotomies is a valuable one, and well worth a perusal. One point of especial value is his contribution to the statistics of immediate resection of a gangrenous intestine when operating for hernia. In sixteen cases the intestine was resected and sutured; nine cases died and seven recovered, a much larger percentage of recoveries than is usually recorded.

HERNIA WITH INTESTINAL GANGRENE.

The question of immediate resection and suture of the gangrenous gut under these conditions is again attracting attention, and cases are accumulating where primary resection has been successful, although the majority of opinion is still in favor of treating such conditions extra-peritoneally, or by forming an artificial anus to be subsequently closed if the patient is rescued from immediate death. Two procedures have been proposed as a substitute for either of these alternatives. The first is indicated in cases where the gangrenous spot is small, and consists of folding in the affected area and suturing the intestine over it in the same way as an intestinal wound would be treated, then, if sloughing takes place, the necrotic mass is cast off into the interior of the bowel. When this method is used, the intestine is immediately replaced in the abdomen and the inguinal wound closed. The other expedient is from Helferich,²² of Greifswald, who proposes to form an anastomotic opening by so uniting the intestines above and below the gangrenous area. The latter portion is then treated outside the abdomen, and is isolated from facial circulation, the anastomotic opening being in the abdominal cavity. This opening he makes only four centimetres long. This he claims is a short operation. Later, if the strangulating intestine regains its vitality, it can be returned to the abdomen, after freeing it from the adhesions about the abdominal wound. If it becomes gangrenous, it can be resected without opening the peritoneum, and the resected ends readily closed. Helferich reports two cases illustrative of this method. One was successful. One died from collapse, but it was found that the anastomosis was complete when examined post-mortem. He claims that the method is indicated where the condition of the strangulated intestine is doubtful and gangrene threatened, rather than in cases where actual gangrene exists.

Poulsen, on the other hand, has collected 23 cases of primary resection of the intestine with immediate suture,²³ with five deaths: which is a good showing if the cases were not selected ones. These operations were done from 1884 to 1888, inclusive. His opinion is that many of the fatal cases are not published. He

²¹ Deutsche Ztsch. f. Chir., 1891, xxxii.

²² Centbl. f. Chir., 1890, Beilage, no. 25.

²³ Hospitals Tidende, K. 3, Bd. 7, pp. 349, 373.

himself at present treats these cases of gangrenous intestine by washing out the peritoneal cavity, extirpating the gangrenous sac, disinfecting its site, drawing out the gangrenous loop till healthy intestine is reached, suturing this in place in the abdominal wound, dressing with iodoform gauze, and later (one to two days) removing loop with Paquelin cautery. The artificial anus is subsequently closed.

An interesting discussion of the treatment of gangrenous hernia by the Surgical Section of the Suffolk District Medical Society, recently published,²⁴ deserves a careful perusal by those interested in this subject.

THE SYMPTOMS OF INCARCERATED OBTURATOR HERNIA.

Krölein²⁵ describes these as resembling those of ileus, that is, intestinal obstruction, together with pain in the thigh radiating from Poupart's ligament to the knee, excessive tenderness over the corresponding pectenial area, and still more marked behind the adductors in the direction of the foramen ovale. The motion of the hip is painful, and in one case there was some swelling of the leg and slight prominence of the pectenial region.

GASTRIC MYOMA.

Kunze reports a case of the removal of a subserous leiomyoma²⁶ by Rupprecht, in Dresden. The tumor was nearly equal to a fist in size, and was situated in the anterior wall near the cardiac orifice. Its removal necessitated an extensive resection of the anterior wall of the stomach, which was accurately closed by suture. The abdomen was closed. Death on the fifteenth day. Post-mortem examination disclosed a firmly closed gastric wound, without any trace of peritonitis. Cause of death, embolic pneumonia.

(To be continued.)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, February 22, 1892, the President, DR. FREDERICK I. KNIGHT, in the chair. DR. EDWARD REYNOLDS read a paper on.

THE ESSENTIALS TO SUCCESS IN REPAIR OF THE PELVIC FLOOR IN PRIMARY AND SECONDARY OPERATIONS.¹

DR. BAKER: I have listened with a great deal of interest to Dr. Reynolds's paper, because I think in the first place it shows the importance in recent tears of taking deep suture, which I am sure has not been fully recognized by the profession as a whole.

The importance, then, of the deep suture, which alone can give, as Dr. Reynolds has insisted upon, this sigmoid curve to the vagina, which in its turn gives firmness, strength and support to the anterior rectal wall as well as to the posterior vaginal wall. It seems to me that in the recent tears of the perineum, so far as my experience has gone, that the important

things to secure success are mainly two: first, the absolute cleanliness of the parts; and, second, with all due respect to Dr. Reynolds, the most perfect approximation of the parts. I should, I think, go a little further than Dr. Reynolds did in regard to this matter of approximation, for the reason that I believe the more nearly we approximate the parts the more nearly we simulate nature, and although this may be a little difficult on account of the ragged ends and swelling, yet still with care, and particularly if we use the suture which he lays stress upon in another way, that is, a suture which as that swelling subsides can be tightened again, I think that we have gained a very important point in regard to the success in recent cases. I have been in the habit of practising and advising in the recent years the use of deep sutures of silver wire, for, after twenty-four or forty-eight hours, when the swelling begins to subside, you can get another twist on them and thus keep the parts in perfect apposition.

Another thing I should criticise a little, and yet I know it is not the custom or habit of most operators, is the importance in any operation on the perineum, be it recent or secondary, of keeping the fingers out of the rectum. I am more and more convinced of the importance of thorough cleanliness at the time of the operation; and although we may wash out the rectum, still we cannot always control the feces that are coming down into that lower rectum, and I think we shall all the more insure a perfect result if we observe the aforesaid rule during operations on the perineum.

I am very much pleased and impressed with the way in which Dr. Reynolds has presented the importance of this subject; and although I think that many operators nowadays are looking with a great deal of interest at the more rapid method of operating by the flap-splitting which has received the name of Tait's operation, why I am not altogether sure, because I remember two surgeons of this city who were operating by flap-splitting on the perineum years and years ago, almost before I had heard the name of Tait. Dr. Beach was, I know, doing virtually the same thing Tait is doing, and Dr. Warren was splitting from above downwards, so that I do not think we need to go further than to term it a flap-splitting operation. I have been disappointed in that operation for the reason that it did not seem to accomplish all I desired in cases in which I have used it. In the series of cases in which I tried it, and I gave it a fair trial, not getting the good results I had expected, I felt desirous of being sure that I was getting all the advantage that could be obtained from it and therefore I asked one of Mr. Tait's pupils to operate on some cases with his method, which he did and the results were not, it seemed to me, entirely satisfactory. I think that in recent tears if we can observe thorough cleanliness and a good approximation of the parts it matters comparatively little what the other steps of the operation are.

I cannot altogether agree with the unimportance of the teeth in the upper part of the vagina; although I know they tend to heal readily, yet still I think there is a great tendency to the formation of more cicatrical tissue if left to nature than if the parts are cleansed and sutures taken.

I think that Dr. Reynolds's diagrams also show exceedingly well the inadvisability of practising any one way of doing an operation on any great number of cases. As we are called to perform more and more operations we shall see that one way of operating on

¹ See page 225 of the Journal.

²⁴ Boston Medical and Surgical Journal, 1892, vol. cxxvi, 297.

²⁵ Bruns, Beitr. z. Klin. Chir., 1890, Bd. vi, Hft. 1.

²⁶ Arch. f. Klin. Chir., 1890, xi, 3, p. 753.

a tear that has occurred on one way is the best, and another way is better for another case. Supposing this tear or separation of the fascial attachment has occurred on one side of the perineum, what is the use of going on and denuding as we would a perineum where both sides have been sutured. In such a case I should say we should do virtually a one-sided operation. I think the diagrams show that we should vary very much our operations, methods of denuding and closing the wounds.

DR. CHADWICK: Dr. Reynolds's study of this lesion has made him so familiar with the subject and his language is so clear that he does not leave much to be said. In the primary operation I think there is no question that he is right about the direction in which the sutures should be put. There are one or two little practical points which are perhaps well to mention. With regard to the finger in the rectum, the distance between the rectal wall and the vagina is so slight that to my mind it is absolutely essential that the finger should be in the rectum when you introduce the needle. It would be more serious to have the needle go through the rectal wall and make a fistula than to run the risk of infection. Of course you should disinfect the finger every time you withdraw it from the rectum.

The point to which those sutures converge at the top is a point where there are no very solid tissues. When they are tightened they pull away from that point, especially in a recent operation when the parts are edematous and torn, and it seems to me well to put the suture through the vaginal wall to get a *point d'appuis* to hold the upper angle of the suture. Another point would be that the sutures should be made very deep, and go behind the torn surface deeply into the muscular tissue of the perineum in order to hold. The superficial tissues are ready to slough and very friable.

With regard to the secondary operation I have operated after Tait's method and with very satisfactory results. I think the operation should be restricted to that class of cases where there is no great prolapse of the posterior vaginal wall. It takes no account of the prolapse of the wall, and I have seen in some of the early cases I did the posterior wall roll out over my approximated surface out of the vaginal outlet after I had got a perfectly good union; in other words, I think that if the vaginal wall is prolapsed and rolled out and been distended it must be excised to a certain extent to reduce the calibre of the vagina and prevent subsequent rolling out. In the class of cases where there is no great prolapse of the walls it seems to me that this operation gives as good results as you can get.

DR. REYNOLDS: As regards the use of the finger in the rectum, I personally think it is unwise to put the finger in the rectum for any but the primary operation. In that I am in the habit of putting the second finger into the rectum; I leave the thumb and first finger outside, never take that middle finger out until the three sutures are in, and then disinfect the finger at once and tie. In a rapid, rough operation like that I think that by this procedure you gain the advantages of the use of the finger without its disadvantages.

As regards the primary operation I should like, if there is time, to state briefly on what I founded my statement that I thought a comparatively rough and ready approximation was the better. I agree with

Dr. Baker that the essential part of the whole operation is to get accurate apposition, but I disagree in that I think that a comparatively rough gathering of the tissues together in such a way that the surfaces can slide slightly on each other leads to better and more exact apposition in cases operated on immediately after labor, than any careful suture I have been able to adopt. For some years in the cases that I have sutured in the wards of the Lying-in Hospital, where I have the best of light, two house-officers, and half-a-dozen nurses to assist me, I have done the perineum as I would do in the secondary operation, inserting the sutures as I would in the secondary operation with every attempt to make the apposition exact, and I confess my results have not been as good as in private practice where I have had no assistance and have adopted the rough method. I think that is because the tears are almost never symmetrically alike on both sides. They are differently stretched on the two sides by labor, they are differently bruised and paralyzed, the muscles immediately after the tear retract in differing degrees; and I believe that when you attempt an exact apposition you generally secure an inaccurate one, that is, you draw together tissues which were never separated from each other; but if you take all the muscular and fascial tissues near the tear into a wide sweeping suture, and bring them together *en masse*, I think that as the tissues restore themselves after labor the ensuing retraction of the muscles will bring them more closely into an exact apposition than can be done by art.

As regards the criticism that you cannot use one operation for so many forms of laceration, that certainly is very true. I did not think there would be time to go into all the forms, but in all of them I think that putting in at least two broad supporting sutures that will act as a splint and take the levator ani muscle off from the denuded point is a good point to remember. The fibres of the levator ani act obliquely from behind forwards and from above downwards, and during defecation the function of these fibres is to draw up the anal orifice as the faeces come down, so we can see how the new line of union running in a direction perpendicular to them must not only be drawn upon from before backwards but also from below upwards by their action, and it seems to me that the two sutures I have mentioned are important and yield good results.

DR. GEO. B. SHATTUCK read a paper on
PNEUMONIA IN BOSTON DURING THE RECENT EPIDEMIC OF INFLUENZA.²

DR. F. MINOT: In my experience with influenza during the last two winters, I observed that a certain proportion of cases were considered by the attending physician as pneumonia, although they had none of the physical signs of that disease; that is, no chill, no dulness, no characteristic expectoration, and no bronchial respiration. In fact the typical signs of pneumonia were absent. In those cases there were signs of oedema of the lungs, often to a very great extent, but without the dulness, and those cases would sometimes improve temporarily under the effect of nitro-glycerine to a remarkable degree, although most of them were fatal in the end. I cannot help thinking therefore that the statistics which are not based upon hospital returns are not altogether safe as a criterion

² See page 518 of the Journal.

for estimating the proportion of cases complicated with croupous pneumonia. In the hospital returns of course there can be no doubt, but among general practitioners a certain proportion of cases of edema of the lung is confounded with pneumonia.

DR. CUTLER: I have had very little experience with pneumonia in my own practice this year. I have seen a number of cases in consultation and they were peculiar in that the onset of the disease was rather slow and the course was protracted. I think that it is my observation that rather more cases of quite young children had pneumonia than I had ever seen before. In fact until within a year or two I do not think I have ever seen a case of pneumonia in a very young child. This winter I have seen several. Also the temperature chart has been peculiar, and instead of following out the usual course has been very much more irregular. As far as the prostration is concerned I should say that perhaps that was a little more marked than one sees it usually in ordinary cases. I have had no experience in the hospital cases, and only a limited one in private practice.

DR. MASON: My experience has been the same as Dr. Shattuck's at the City Hospital and relating to the same cases largely. It is only by the presentation of such carefully-prepared tables that we can form an accurate opinion of these accompaniments of influenza, or the extent to which influenza directly or indirectly causes increase in the death-rate of Boston from pneumonia and bronchitis. It seems to me difficult to allot the exact proportion of cases that may be accompaniments of influenza and those which are sequelae as they would follow any exhausting disease. I have found it very difficult with hospital patients, particularly, to find out whether they had a definite history of a previous attack of influenza or not, coming into the hospital very ill, with no friends perhaps who could speak for them, but I have been inclined myself, both this year and two years ago, to regard pneumonia as a necessary and fatal accompaniment of epidemic influenza rather than as a sequel. That I think was the view taken in earlier epidemics by Graves, Watson, and other distinguished physicians in the former part of this century, and certainly there are patients who, after a day or two of preliminary symptoms, are stricken down by an acute attack of lobar pneumonia. To be sure the same thing happens in non-epidemic seasons so that it is a very difficult matter to decide by figures, but if we had not influenza with us I think it is quite certain we should not have pneumonia at least to anything like the same extent.

In regard to the apex pneumonia I suppose the delirium was more common in children than in adults. A child with any form of pneumonia is apt to be delirious.

The complications which were most fatal in pneumonia were empyema, alcoholism and Bright's disease. I have seen cases at the City Hospital in which the empyema developed before the process of resolution had fairly begun. Two years ago I think there were about a dozen such cases which entered the medical wards, all of which fortunately became convalescent from the pneumonia and the empyemas were drained successfully.

DR. GOSS: My experience was necessarily limited. It seemed to me that in this epidemic there were much more frequent troubles with the respiratory organs than two years ago. There were a great many more cases

of bronchitis and pneumonia, and my opinion is that these affections were accompaniments or complications rather than sequelae; often the pneumonia being insidious in its approach perhaps and not as frank as in the ordinary croupous pneumonias which we see at other times.

DR. J. H. MCCOLLUM: It is an interesting fact, bearing on the subject of pneumonia after influenza, that at the Suffolk County Jail during the first epidemic, in which there were 125 cases, in no instance did pneumonia supervene. During the second epidemic of this disease, in which there were 80 cases, there was a like freedom from pneumonia. The explanation of this immunity from pneumonia is, without doubt, due to the fact that as soon as the first symptoms of influenza appeared the patients were confined to their cells and remained there until they were well.

I think that the influence of influenza on the death-rate of Boston is not fully appreciated. During 1891 the percentage of deaths from this disease to the total mortality was twenty-nine one hundredths of one per cent., while that of scarlet fever, one of the most prevalent of diseases, was only sixty-one one hundredths.

There is a striking statement in the report of the State Board of Health of two years ago, that directly or indirectly the first epidemic of influenza caused more deaths in Massachusetts than the great epidemic of small-pox in 1872 and 1873. Referring again to pneumonia at the jail, Dr. McCollum stated that there were very few cases at any time, that the physical condition of the prisoners was such that they would be extremely susceptible to an attack of pneumonia.

DR. ATHERTON: I think that papers like this one ought to be encouraged, since they are so valuable.

In regard to pneumonia, I have seen very little of it in the last epidemic. In the first epidemic it seemed to me that the neuro-muscular symptoms were more marked than the respiratory, and much more so than the gastric. Perhaps the doctor would not agree with me in regard to there being a relapse in the last year, but I do feel as if I had seen symptoms very marked and constant of subacute character, beginning February and March and lasting through the spring, and a second relapse about the last of December. The symptoms I saw last spring were decidedly neuro-muscular in character and respiratory too. This year the respiratory symptoms were far more prominent in every way. Except in regard to the pneumonia, the respiratory symptoms were confined largely to the upper air-passages, laryngitis, serious sore throats, pressure about the chest, and all those symptoms, partly, perhaps, connected with the nervous system.

DR. J. S. GREENE: As to the matter of concomitant versus sequelae, two of the hardest cases I have had commenced as a sharp attack of pleurisy, and developed pneumonia simultaneously with influenza.

DR. GEO. B. SHATTUCK: I was very much interested in hearing what Dr. McCollum had to say. I think it is a fair contribution to the question raised. There are certainly other people who are quite as hygienically situated as our friends in the jail, and who still get pneumonia after influenza or with influenza because, I should say, they did not take care of themselves.

In regard to apex pneumonia I fancy that children are always liable to delirium, cerebral excitement, with all pneumonias as with all acute febrile attacks.

With reference to the question as to whether pneumonia is a sequel or a complication or concomitant I

do not wish to dogmatize about it. I simply think it is a fair question for speculation and I am rather inclined to the former view. I did not intend to say that there had been no recurrence of epidemic influenza during the year 1891 before December; but that I thought we might consider that the months of December, 1890, and January, 1891, had been free from it in this neighborhood. I did not wish to express an opinion in regard to the spring months.

DR. GAY showed

A COLLECTION OF CALCULI RECENTLY REMOVED FROM A BLADDER BY LITHOTOMY.

The man, aged sixty-nine, had been disabled from business for five years. In the earlier period of his illness he was repeatedly sounded for stone, at one time it being done under ether, but nothing was found till recently. The stones are hard, smooth and of a light fawn color. Fourteen were shown varying in size up to an inch and a quarter in diameter. Two ounces were crushed and removed by Bigelow's method. There being no apparent limit to the number in the bladder, lateral lithotomy was done, and the remainder removed. The entire amount weighed five and a half ounces. He died of uremia and exhaustion in a week.

DR. ROTCH reported

A CASE OF DOUBLE MOVABLE KIDNEY.³

DR. MINOT: I should like to know the interval between the operation and the last time the patient was examined, and whether the kidneys were in place.

DR. ROTCH: The operation was done in June last. I examined her yesterday. The kidneys were in place.

DR. MINOT: I think what is needed is a table, if possible, containing the results for a considerable length of time afterwards. My impression is that Guttner speaks of several cases where the operation had succeeded, but after a time the former condition returned.—I refer to the operation of sewing the kidney. I think Guttner gives several instances of that condition in children under twelve years of age. The great proportion of cases on the right side in women is generally ascribed to the pressure of the corset and it would seem as if that was the most probable cause. The kidney slipping out from its capsule and getting beneath the liver, its relations to the liver are entirely changed, and the pressure of the corset forces it down and aids in the displacement; and even before the kidney has moved from its bed, the pressure upon the liver from the corset would tend to force it in a measure out from its capsule.

Resolutions on the death of DR. HENRY I. BOWDITCH were presented and passed.

Recent Literature.

A Practical Treatise on Fractures and Dislocations.

By FRANK H. HAMILTON, A.B., A.M., M.D., LL.D. Eighth edition, 850 pages, 507 illustrations. Revised and edited by STEPHEN SMITH, A.M., M.D. Philadelphia: Lea Bros. & Co. 1891.

The work of Dr. Hamilton is so well known that a description is almost unnecessary. Its numerous editions are convincing proof, if any is needed, of its value and popularity. It is pre-eminently the authority on

³ See page 522 of the Journal.

fractures and dislocations, and universally quoted as such. In the new edition it has lost none of its former worth. The additions it has received by its recent revision make it a work thoroughly in accordance with modern practice, theoretically, mechanically, aseptically. Its new editor has discarded matter now irrelevant, and separated clinical data from the abstract portion of the work by different type, so that it may be readily distinguished. Modern ideas and new facts have been introduced when indicated. The list of illustrations shows marked change and improvement, for one hundred and five new ones have been added to increase the efficiency of this valuable means of imparting information respecting methods and details.

The original arrangement of this volume, as regards classification, has been retained unchanged: Part I (498 pages) being devoted to the discussion of fractures, while Part II (347 pages) treats of dislocations.

Part I opens with a description of fractures in general, and treats of their character, etiology, clinical history, diagnosis, repair, prognosis, treatment, complications, and possible sequelæ. It is an interesting and very instructive chapter, and would be more so had more information been given under "Repair of Broken Bones," respecting *rate* of union. "Treatment" is well discussed; and "Delayed or Non-Union" attracts especial interest.

Specific fractures are next treated. They are classified anatomically. All possible fractures of individual bones with their causes, symptoms, diagnosis, treatment and complications are satisfactorily considered. As above, the only addition possible would be more specific facts with regard to the time required for union. Such data are of great importance when the duration of treatment is in question; and there is such a difference of surgical opinion at present on this point, especially with reference to these lesions affecting the lower extremity, that such data would seem indicated. How soon it is safe to omit apparatus, and similar considerations are of great importance in actual practice, and have not apparently received the amount of attention given to many other portions of the work.

Part II, describing dislocations, has an arrangement analogous to Part I. Like it, little can be said except in commendation. The article entitled "Dislocation of the Head of the Radius Downward (by elongation)" is a good example of the manner in which the editor has performed his task. This lesion is frequently unrecognized in practice and unmentioned in surgical literature, even in works on dislocations. Here an entire section is devoted to it, which lacks completeness only in that the writer has paid more attention to the French literature of this subject than to the valuable English and American articles of the past five years.

The task of writing a complete treatise on a subject of such magnitude is no easy one. Dr. Smith has aimed to make the present volume a correct exponent of our knowledge of this department of surgery. In examining this volume one is at once struck with the evidence of the vast amount of labor its compilation and reconstruction must have necessitated. The more one reads the more one is impressed with its completeness. The subject is one of great importance, the different lesions very numerous, the generalization of statistics and clinical data difficult and laborious, the mass of material at the disposal of such a writer enormous. Yet the work has been accomplished; and has been done clearly, concisely, excellently well.

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THE INFLUENCE OF EMOTIONS IN THE PRODUCTION OF ORGANIC DISEASE.

WHETHER organic diseases of the heart may result from mental causes is more doubtful than that arterial disease may so originate. Much has been written of late on the influence of emotions in the development of arterio-sclerosis in general and of arterio-sclerosis of the heart in particular. This morbid condition has been referred to increased arterial tension, and one of the causes of this high tension is mental emotion. The condition of a person under intense emotion is that of vascular spasm; "the face is pale and covered with sweat, the extremities are cold, the pulse is small, weak and miserable, an indescribable anguish constricts the heart, whose beatings, precipitate and tumultuous at first, may be suspended in a state of syncope." That there is spasm of the arterioles here has been proved by the application of Mosso's plethysmograph to similar cases.

"Let us suppose," then, says Huchard, "that the emotions are repeated, are perpetuated, as is the case with many politicians, financiers, or others involved in business schemes, who lead restless, anxious, worried lives, and then you will understand why it is that their arterial system, in a state of permanent hypertension must in the long run be doomed to the lesions of arterio-sclerosis."¹

Dr. Clifford Allbut mentions the case of a young man whose pulse-tracing during twelve months of domestic anxiety showed, in comparison with that before and after, a marked and persistent increase of tension (Lys).

The dependence of angina pectoris upon degenerative vascular changes in the heart-muscles has been shown by recent writers, as Lauder Brunton and Huchard; the latter, especially, in his brilliant work on "Diseases of the Heart," calls attention to the influence of mental disturbance in producing increased

tension and arterial degenerations. Other results of atheroma, such as aneurism and cerebral hemorrhage can be shown logically to follow emotional causes sufficiently intense and sufficiently prolonged. Dr. Graham Lys in recent numbers of the *London Lancet* (April 23-30, 1882), has considered the subject in its relation to other morbid states; such as Graves' disease, dyspepsia, jaundice, diabetes, renal cirrhosis, chorea, cancer, etc.

With regard to Graves' disease, he affirms that assuming, as we are bound to do, "that an antecedent mental state may fairly be held responsible for the subsequent morbid developments there will be difficulty in refraining from the belief that the exophthalmos and goitre are in some way referable to the palpitation." "Slight thyroid enlargement is comparatively so common in girls who suffer only from intermittent palpitation that there is little difficulty in referring it to this cause, and the exophthalmos is the least constant and least developed of the three."

"It can hardly be contested," he says, "that in every case of this disease a morbid mental state of constant character precedes its development; the prominent features of that mental state are depression with extreme irritability."

There can be no question that indigestion follows mental disturbance; the latter, if prolonged, may entail severe and even incurable dyspepsia. Dr. Lys thinks that this may be due to an arrest of the secretion of gastric juice. Hutchinson has dwelt on the influence of emotion in some of the secretions, and has instanced cases of persistent dry mouth following some mental shock. Beaumont directly observed the arrest of the gastric secretions by anger and other severe emotions. Probably, also, movements of the stomach may be inhibited by emotion; irritability or sluggishness of the bowels is often referable to mental disturbance according to its kind; the latter disorder reaches its climax in the extreme constitution of melancholia.

Many instances are on record of simple jaundice following mental emotion; the question how this can happen, has thus far not been explained. Dr. Lys does not venture any explanation, but supposes that the jaundice must be due "to some influence on the hepatic cells, which, while leaving them competent in some degree to complete the formation of bile-pigment, interferes with the excretion of it." He alludes to the fact that acute yellow atrophy of the liver often follows immediately mental shock, and runs its course rapidly.

Diabetes, mellitus and insipidus, is acknowledged by all authors to follow as a direct result of mental anxiety or shock. Fagge quotes from Herman Weber the case of a gentleman who became diabetic on two separate occasions, at an interval of nine years, under the pressure of intense anxiety from impending commercial ruin, recovering, on each occasion at a turn in his circumstances. Dr. Lys thinks that cases of diabetes mellitus are rare without some history of mental dis-

¹ Huchard: *Maladies du Coeur et des vaisseaux*, Paris, 1889.

turbance, more or less striking, immediately preceding the attack. Diabetes insipidus is a much rarer disease, but mental shock and emotion are mentioned among its causes. The pathology of both forms is readily referable to vaso-motor dilatation from mental disturbance.

Dr. Lys refers to the fact that granular kidney has, from time to time, been attributed to mental anxiety. Dr. Clifford Allbut has asserted as an undoubted clinical fact that renal cirrhosis is often caused by prolonged mental anxiety; he suggests that the change might be such derangement of the nutrition of the kidney as occurs in the liver in diabetes. Dr. George Johnson, writing afterwards, says that the explanation of this view is that mental anxiety is a cause of dyspepsia, and functional albuminuria often depends upon the excretion of some abnormal products of imperfect digestion; and this has been mistaken for organic Bright's disease. The question whether granular kidney and arterio-capillary fibrosis may not be themselves, primarily, like the cardiac hypertrophy and arteritis deformans associated with them, the result of increased tension, is one which Dr. Lys thinks may still be reasonably entertained.

As for chorea, its pathology seems to be as inexplicable as that of any disease known. There can be no doubt that it is often due to fright, equally irresistible is the evidence which attributes it in some cases to irritation. Dr. Lys thinks that many diseases, as rheumatoid arthritis and phthisis, depend on mental trouble only as one means of failure of general health. Other paroxysmal affections, such as asthma and migraine, undoubtedly often own mental shock as the exciting cause of individual attacks. As for purpura, we can readily credit that increased tension due to mental cause, might be the determining agent in producing hemorrhage. The frequent dependence of amenorrhoea and menorrhagia on mental causes is well known. Alopecia and canities as a result of fright and anxiety are no fiction of the poets.

Dr. Lys asks finally, What is the relation of malignant disease to emotional causes? He feels the want of positive facts here, he can only refer to the conclusions which many who have had the largest experience with disease have arrived at. "Too often," says Sir James Paget, "cancer quickly follows deep anxiety, deferred hope, disappointment." Dr. Murdoch says: "I have been surprised at the frequency with which patients suffering from primary cancer of the liver have traced the commencement of their ill-health to protracted grief or anxiety. The cases have been far too numerous to be accounted for on the supposition that the mental distress and the cancer have been mere coincidences." He quotes Drs. Snow and Erichsen to the same purport.

"It might be thought," says Dr. Lys, "that all the mental trouble did was to lower the general health; but cancer is not observed with anything like the same frequency when the general health is lowered from other causes — such as want. Many cases might be quoted in which the development of cancer has

followed mental trouble in a singularly striking way; but no individual instance can go far in carrying conviction; it is rather the fact that the association is so very constant that carries weight."

MEDICAL NOTES.

TYPHOID FEVER IN CHICAGO. — The number of deaths from typhoid fever in Chicago was high during the past winter, but the rate has gradually decreased since then. There were ninety deaths from this cause during the second week in January, whereas the total for the month of April was only fifty-six.

AMERICAN PEDIATRIC SOCIETY. — At the recent meeting of this Society the following officers were elected for the ensuing year: President, A. D. Blackader, M.D., Montreal; First Vice-President, J. M. Keating, M.D., Colorado Springs; Second Vice-President, C. W. Earle, M.D., Chicago, Ill.; Secretary, S. S. Adams, M.D., Washington, D. C.; Recorder, William P. Watson, M.D., Jersey City; Treasurer, C. W. Townsend, M.D., Boston; Member of Council, T. M. Rotch, M.D., Boston.

PRECAUTIONS TAKEN TO PREVENT EPIDEMICS. — Since the recent outbreak of typhus fever in New York, the health authorities of New York and Boston have cooperated in keeping track, as far as possible, of recently-arrived immigrants. All immigrants arriving in New York, who give Boston as their destination, are entered upon a list which is sent to the Boston Board of Health. This Board is usually able to find these persons and to keep them under observation for some time, so that in case of the appearance of any infectious disease they may be quickly isolated and other necessary precautions taken.

AN ANTI-HOMEOPATHIC PRIZE ESSAY. — Dr. G. M. Gould, of Philadelphia, offers a prize of \$100 for the best essay showing "The Ridiculous Pretensions of Modern Homeopathic Practice." An essay should not contain over 15,000 words, and in simplicity and directness should be adapted to the commonest lay understanding. Papers should be sent Dr. Gould on or before January 1, 1893, type-written, without the name of the author, but accompanied by a sealed letter, giving the author's name with motto or *nom-de-plume*. The essays will be given to a competent committee, and when their decision is reached the sealed letters of the authors will be opened, and the prize sent the winner. The essay will then be cheaply but well printed in large quantities, and supplied physicians at the cost of printing.

NEW JERSEY LAW REGULATING MIDWIFERY. — A law has been passed in New Jersey that every person practising midwifery shall possess a certificate from the State Board of Medical Examiners. All now practising are allowed to obtain a certificate without examination, others must pass such examination as the board shall require. The board may refuse or

revoke certificates for improper conduct or for failure to report births or puerperal fever. No person may advertise as a midwife without a certificate, but any one may give gratuitous service in case of emergency. Legally qualified physicians are not obliged to take out a midwife certificate.

AN OFFICIAL DOSE TABLE.—At a recent meeting of the Académie de Médecine in Paris, Dr. Peltier proposed that the Academy issue a yearly table of the maximum doses of dangerous drugs for different ages, and that a law be advocated that no physician who keeps within the limits of the doses in the list shall be prosecuted for poisoning. If, on the other hand, a dose is prescribed larger than the maximum of the official list, the prescriber does so at his own risk.

POISONING OF A RACE HORSE.—Much sensation has been caused in the racing world in England by the announcement that Orme, a famous thoroughbred colt belonging to the Duke of Westminster, has been poisoned. A large reward was offered by his owner for any information that would lead to the detection of the poisoner. The *Lancet*, after reviewing the symptoms, arrives at the conclusion that they do not warrant a belief that the horse was suffering from anything which could not be attributed to natural causes.

GLANDERS IN GREAT BRITAIN.—It appears that the number of cases of glanders in horses has diminished during the past two years. All cases should now be reported under the contagious disease (animals) act; the annual reports issued by the government show that in 1891, 1,357 outbreaks were reported; in 1890 only 937; while in the previous year there were over 2,000 cases in London alone. Glanders is very much less prevalent than formerly. In the pre-railway days, when horses were so extensively employed in road traffic of all kinds, it was a veritable plague, and there were few stables in which it did not exist. Horses suffering from it were regularly worked, and in the cavalry and artillery corps it was extremely rife. It occasioned great losses in horse establishments, and there can scarcely be a doubt that many people also died from it, though its nature in them was not suspected.

NEW ENGLAND.

MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY.—The Legislature has empowered this society to hold real and personal property up to \$150,000 in value.

THE NEED OF AN ISOLATION HOSPITAL IN LYNN has been noticed during the past few weeks in connection with three or four cases of scarlet fever which have occurred in non-residents of the city.

BEQUESTS.—By the will of the late Dr. Pliny Earle of Northampton, the city will receive \$50,000 to be devoted to the Forbes Library, and the town of Leicester \$6,000 for the erection of a library.

THE HARVARD MEDICAL SCHOOL ASSOCIATION will be glad to send to graduates of the Medical Department of Harvard University, in any part of the

world the catalogue of its members, to which we referred last week. All graduates of the School are eligible to membership in the Association, the object of which is to unite all alumni and to advance the interests of the School and of medicine. The entrance fee and the annual assessment are merely nominal.

NEW YORK.

A COLORED MEDICAL STUDENT.—Dr. William T. Merchant, a colored physician from West Virginia, came on to New York early in April to enter the Post-Graduate Medical School, but, on account of his color, it is said, he was not admitted; and after waiting for a number of weeks he sought the advice of Colonel Robert Ingersoll, who was authorized to take the case into the courts, if necessary. Colonel Ingersoll wrote a letter to Dr. Roosa, the President of the college, and the Faculty have now decided to admit Dr. Merchant.

POLITICAL MEDICAL APPOINTMENTS.—At the same time that Dr. Janeway resigned his professorship at Bellevue Hospital Medical College, he gave up his position as attending physician to Bellevue Hospital and consulting physician to the Board of Health. It is stated that his reason for this action was on account of his dissatisfaction at the partisan course, as he believes, of the Board of Health, in discharging without proper cause Colonel Prentiss, for many years Counsel to the Board, and Dr. Ewing, the Sanitary Superintendent. As Bellevue College, as well as Bellevue Hospital, is to a considerable extent under the control of the municipal authorities, he desired to free himself from all connection with the latter. Dr. H. M. Silver has been appointed Demonstrator of Anatomy at Bellevue in the place of Dr. Briggs, promoted to the professorship of Materia Medica and Therapeutics.

Miscellany.

THE ABUSE OF COCAINE.

NORMAN,¹ in a paper in the *Journal of Mental Science*, on the subject of the cocaine habit, comes to the conclusion that this drug is more insidious than morphine. It fastens upon its victims more readily and its hold is at least as tight. It is treacherous, and easily produces break-down both in the moral and intellectual spheres. It is intensely toxic, bringing about destructive tissue change after a comparatively short period of abuse. In the last respect it differs from alcohol and morphine which may be long indulged in, in considerable quantities, without giving rise to serious structural change. In chronic cocaine poisoning marasmus appears early and develops with extreme rapidity; convulsions are not uncommon; and chronic poisoning in animals produces degeneration of the cells of the medulla and spinal cord, also in the nerve cells of the heart ganglia and in the liver cells. The great danger of cocaine lies in the fact that it is the most agreeable and alluring of all narcotics. It produces little or no headache and nausea, and a pleasant effect is

¹ *Lancet*, May 7.

produced with a comparatively small dose; but toxic symptoms are rapidly developed, and within three months of the commencement of the habit, there may be marked indications of degeneration.

METHYLENE-BLUE IN MALARIA.

In the JOURNAL of March 3d, we referred to some experiments made by Dr. Thayer at the Johns Hopkins Hospital in which apparently striking results were obtained in malaria by the use of methylene-blue. Further trials of this drug have shown that it cannot be considered a substitute for quinine. Dr. Thayer's conclusions are as follows:¹

Methylene-blue has a definite action against malarial fever, accomplishing its end by destroying the specific organism; but it is materially less efficacious than quinine, failing to accomplish its purpose in many cases where quinine acts satisfactorily.

The action appears to be rapid, the chills disappearing or the temperature, in the remittent cases, falling to normal during the first four or five days; but later, however, if a sufficient number of organisms have resisted the drug, they appear to develop again directly under its influence, causing a return of the symptoms.

Methylene-blue seems to have no advantages over quinine which would warrant its further use.

LEPROSY IN MINNESOTA.

DR. CHR. GRONVALD, in a short communication embodying the report of the committee on leprosy of the Minnesota State Board of Health, summarizes the results of that Board in the study and care of leprosy in the State. The disease exists in the State among the Scandinavians from infected localities.

There are medical correspondents everywhere in the State, who report all suspected cases to the State Board of Health, which then makes particular inquiries through its standing committee on leprosy, composed, since 1872, of the author and the Secretary of the Board. In 1891 there are eighteen lepers known to live in Minnesota, of whom ten had the anesthetic and eight the tubercular form of the disease. All known lepers are registered and kept under observation, and all suspected cases carefully looked into. The history of these cases has been very thoroughly studied. No further isolation than the use of their own beds and utensils is required, and this their own good sense and that of their relatives, as a rule, secures. The State Board of Health and the local boards have abundant power to enforce the strictest isolation, if found needful; but there has not been any occasion for the use of such power, as the disease is limited to the immigrants, and has never appeared in the descendants of lepers, nor in any one born in the State. It is under constant and careful observation, and has been for the last eighteen years under the care of the State Board of Health.

Dr. G. A. Hansen, of Bergen, who in 1888 went to the Northwestern States to study leprosy among the Scandinavian immigrants, reported that of about 160 lepers who had immigrated into Wisconsin, Iowa and Minnesota, thirteen were known to be alive; and with perhaps a few exceptions, all the others were dead.

¹ John Hopkins Hospital Bulletin, May.

Of all the descendants of lepers, and this includes the great-grandchildren of some, not a single one became leprosus.

JOHN AMORY JEFFRIES. RESOLUTIONS OF THE BOSTON MEDICO- PSYCHOLOGICAL SOCIETY.

The members of the Boston Medico-Psychological Society recognize, in the death of Dr. John Amory Jeffries, the loss of a valued associate and friend.

Bringing to the study of medicine a mind already trained in biological research, in the few years of his professional life he had made actual additions to medical knowledge, and, with the opportunities that were opening before him, he gave promise of much greater achievements. Medicine has lost one of its zealous and scientific students.

Although neurology was only one of the studies in which he was interested, he had already done work worthy to be compared with his investigations in bacteriology and ornithology. His last work was done for our Society, and we would express not only our personal loss but the loss which the medical profession has sustained by his untimely death.

In expressing our own sorrow at the death of one whose attainments were so high, whose promise was so great, whose zeal was so ardent, and whose friendship was so sincere, the Society would extend its sympathy to his family.

THERAPEUTIC NOTES.

ANTIPYRIN AND THE BACILLUS OF DIPHTHERIA:—Vianna¹ reports a series of experiments of antipyrin upon the Klebs-Löffler bacillus. In the proportion of two and one-half per cent., it prevents their development, and in five per cent. it kills them in twenty-four hours. As well as hindering the growth of the micro-organism, the author believes that it destroys the toxic properties of their products.

HICCOURT AND THE PHRENIC NERVE:—Lelio² reports excellent results in the treatment of hiccough by pressure over the left phrenic nerve. This is not a new method, but in the opinion of the author has not received proper attention. Digital pressure is made as long as is necessary in the interval between the heads of the sterno-cleido-mastoid muscle of the left side.

HYDROCHLORIC ACID FOR VOMITING:—Alkiewicz³ recommends small and frequent doses of hydrochloric acid, well diluted, for the treatment of vomiting due to various causes.

LACTIC ACID AS A PROPHYLACTIC OF GOUT:—Berenger-Ferand⁴ describes this method which has recently attracted attention in France. The patient is given half a drachm of lactic acid a day for three or four weeks. It is taken in one dose in the morning. At the end of this time it is stopped for ten days, and then taken again in the same manner. This is continued for several months or even years.

THE ANESTHETIC PROPERTIES OF COCAINE:—Bignon⁵ calls attention to the fact that cocaine, in slightly acid solutions, loses much of its anesthetic property, but this is entirely restored by neutralizing the acid. The maximum intensity of cocaine as an anesthetic occurs when the alkaloid is suspended in a

¹ Bulletin Médical, March 30th.

² Acad. des Sciences.

³ Nowiny Lekarskie.

⁴ Bull. Gen. de Therap., December 30th.

⁵ Bull. Gen. de Therap., 1891, 170.

slightly alkaline solution. This may be accomplished by the use of carbonate of sodium, but this must be added at the time when it is used, otherwise the cocaine in suspension will collect at the bottom of the bottle and cannot easily be suspended again.

INFLUENCE OF PURGATIVES ON BILE. — Lowenstein⁶ finds that aloes, rhubarb, cathartic acid, jalap, gamboge and podophyllotoxin do not increase the secretion of bile if given in large doses. Absence of bile in the intestine lessens the purgative effects of the last three drugs, and increases the effects of aloes and rhubarb.

TO MEASURE THE CAPACITY OF THE STOMACH. — Forlanini⁷ measures the capacity of the stomach by passing a sound and distending the organ with air introduced at a known pressure, about seven centimetres of water. The air is then withdrawn and its volume measured. By this method the result of treatment can be definitely ascertained.

Correspondence.

VIRGINIA MEDICAL LAW.

We have received the following letter from the Secretary of the Medical Examining Board of Virginia, in regard to our note on the Virginia Medical Law which we corrected in the issue of May 12th :

MR. EDITOR: — A quack from your city was recently prosecuted by the Medical Examining Board of Virginia, in the Hustings Court of this city, for practising without complying with the "law regulating the practice of medicine and surgery in Virginia."

The case was decided against the Board upon the ground that the law was defective in that it failed to make specific provision for the registration of certificates of non-residents. The Court distinctly affirmed the constitutionality of the law in a letter to the President of the Board, setting forth the basis and scope of the decision. I quote the letter (Judge S. B. Wills) above alluded to, bearing date of 14th April, 1892.

"(1) I decided that the Legislature of the State has a right to pass laws regulating the practice of medicine in this State. Such a law comes clearly within the police power of the States.

"(2) That the Legislature has a right to require non-residents to comply with the terms upon which it allows citizens of our own State to practice (129 U. S., Dent v. West Virginia).

"(3) That the Legislature, not having provided a place where the non-resident physician may record the certificate required by law as a prerequisite to obtaining a license for practising medicine, etc., has imposed upon him a condition which it is impossible for him to perform, and therefore, discriminates against him — such a condition amounting, in fact, to prohibition."

Such is the basis of this decision, and it cannot possibly apply in any other jurisdiction than that of the city of Richmond.

Some of the ablest lawyers of Virginia state that they believe the decision would be reversed by the higher courts.

This decision only applies to transients, and the law remains in full force with the single exception.

Very truly yours,

JACOB MICHAUX, M.D.,
Secretary of Board of Medical Examiners of Virginia.

⁶ Bull. Gén. Théráp., November 15, 1891.

⁷ Rif. Med., October 24, 1891.

A MEDICAL DIRECTORY HUMBUG.

BOSTON, May 23, 1892.

MR. EDITOR: — A man is now going about this city ostensibly delivering some sort of a medical "Directory," and presenting an order blank for the same, bearing the ostensible signature of the physician. Attached to the same blank is the professional or visiting card of the physician called upon.

Careful examination of the slip shows that the price to be paid was two dollars, while this sum has been obliterated and in one corner of the slip the cost is \$2.50 or \$3.00. The sum to be collected has therefore been "raised" to this degree.

Yours truly, B.

DANTE REPORTS A CASE.

BOSTON, May 21, 1892.

MR. EDITOR: — Bandoni's case of the man with the remarkable anus, cited in the JOURNAL of May 19, is not without a precedent, albeit a bad one. In the "Divine Comedy" we read of Barbariccia, leader of a band of demons:

"Egli avea del cul fatto trombetta. . . .
Nè già con si diverse cannella
Cavalier vidi muover, nè pedoni,
Nè nave a segno di terra o di stella."

"He had made a trumpet of his rump. . . .
But never yet with bagpipe so uncooth
Did I see horsemen move, nor infantry,
Nor ship by any sign of land or star."

K.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, MAY 14, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.			Percentage of deaths from				
		Deaths under five years.	Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhoeal diseases.	Diphtheria and croup.		
New York	1,515,201	897	356	14.74	24.97	2.86	1.58	3.52	
Chicago	1,069,450	456	172	17.38	14.62	2.20	.88	6.82	
Philadelphia	1,046,364	443	140	8.97	10.81	4.00	1.61	4.07	
Brooklyn	806,343	—	—	—	—	—	—	—	
Baltimore	431,201	178	95	7.28	15.68	2.24	.56	3.36	
Albany	448,471	210	65	11.52	16.32	3.36	.48	5.28	
Baltimore	434,439	—	—	—	—	—	—	—	
Cincinnati	296,908	28	27	8.16	19.38	2.04	—	6.12	
Cleveland	262,000	90	31	11.11	22.22	—	4.44	2.22	
Hartford	241,000	—	—	—	—	—	—	—	
Pittsburg	240,000	99	44	26.26	19.19	1.01	5.05	8.08	
Milwaukee	240,000	97	47	16.38	11.33	3.09	1.03	7.21	
Washington	230,302	85	24	17.53	15.29	1.47	4.68	5.85	
Nashville	76,168	23	11	4.74	1.74	—	17.40	—	
Portland	23,100	3	5.00	10.00	—	—	—	5.00	
Worcester	81,625	25	11	24.00	12.00	4.00	4.00	—	
Lowell	77,696	31	12	25.84	12.92	—	16.15	6.46	
Fall River	74,398	26	17	3.85	19.25	3.85	—	—	
Cambridge	70,928	24	4	20.83	—	—	8.33	4.16	
Springfield	53,429	24	10	23.80	12.48	—	4.32	—	
Lawrence	44,654	26	8	11.55	7.70	3.85	3.85	3.85	
Springfield	44,179	14	3	21.42	7.14	—	—	7.14	
New Bedford	40,738	16	5	6.25	—	—	—	—	
Salem	36,801	—	—	—	—	—	—	—	
Chelsea	27,700	15	—	—	20.00	—	—	—	
Haverhill	25,413	9	32	—	11.11	—	—	—	
Brockton	27,294	6	1	20.00	20.00	—	—	20.00	
Faunton	25,445	3	1	66.66	—	33.33	33.33	—	
Glocester	24,651	—	—	—	—	—	—	—	
Marlboro	22,037	—	2	0	14.28	—	—	—	
Wellesley	22,037	—	2	0	—	—	—	—	
Waltham	18,707	6	32	—	16.66	—	—	—	
Pittsfield	17,281	5	1	—	—	33.33	—	—	
Quincy	16,723	4	—	—	50.00	—	—	50.00	
Northampton	16,340	4	—	—	25.00	—	—	25.00	
Marlboro	13,947	11	3	18.18	18.18	9.09	—	9.09	
Medford	11,070	5	0	20.00	—	—	20.00	—	
Everett	11,068	2	0	50.00	—	—	—	—	
Hyde Park	10,193	4	0	—	—	—	—	—	
Peabody	10,158	4	0	—	—	—	—	—	

Deaths reported 2,968; under five years of age 1,094; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhoeal diseases, whooping-cough, erysipelas and fevers) 433, acute lung disease 517, consumption 343, diphtheria and croup 143, scarlet fever 80, diarrhoeal diseases 60, measles 45, typhoid fever 10, malarial meningitis 10, whooping-cough 15, fever per se 12, erysipelas 8, malarial fever 5, small-pox 2.

From measles New York 36, Chicago 5, Milwaukee 2, Cleveland and Pittsburgh 1 each. From typhoid fever Chicago 16, Pittsburgh 11, Philadelphia 8, New York, Boston and Washington 2 each, St. Louis, Lowell and Cambridge 1 each. From cerebro-spinal meningitis New York 7, Worcester 4, Lynn 3, Washington 2, Chicago, Boston, and Cleveland, 1 each. From whooping-cough New York 7, Chicago, Philadelphia and Milwaukee 2 each, New Bedford and Malden 1 each. From erysipelas New York 2, Chicago, St. Louis, Boston, Cleveland, Milwaukee and Washington 1 each. From small-pox New York 2.

In the twenty-eight greater towns of England and Wales with an estimated population of 10,188,449, for the week ending May 7th, the death-rate was 19.7. Deaths reported 3,841; acute diseases of the respiratory organs (London) 297, measles 237, whooping-cough 152, diphtheria 43, scarlet fever 42, diarrhoea 41, fever 25.

The death-rates ranged from 14.3 in Halifax to 28.3 in Sunderland; Birmingham 19.0, Bradford 18.5, Croydon 17.2, Leeds 19.2, Liverpool 24.2, London 18.9, Manchester 18.4, Nottingham 16.0, Portsmouth 19.5, Sheffield 22.8, West Ham 17.3, Wolverhampton 18.7.

METEOROLOGICAL RECORD.

For the week ending May 14, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Date.	Baro-meter		Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath.*		Rainfall in inches	
	Daily mean		Daily mean		Daily mean		Daily mean		Daily mean		Daily mean			
			Maximum.	Minimum.										
S. 8	30.04	59	60	40	23	49	51	N.W.	N.W.	20	S	F.		
M. 9	30.20	54	57	50	71	51	61	N.E.	W.	14	12	C.		
T. 10	30.14	53	58	47	46	53	50	N.E.	S.	9	12	C.		
W. 11	29.66	57	46	78	97	87	87	S.E.	N.W.	9	8	O.	.48	
T. 12	29.88	50	52	47	80	71	78	N.	S.E.	7	8	O.	.61	
F. 13	29.78	47	50	47	69	62	60	S.E.	S.	7	7	O.	.65	
S. 14	30.36	58	67	49	61	73	68	S.W.	S.	7	12	F.		
EP	30.06	52	58	46	68	67	68			10	8		.08	

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow. + Indicates trace of rainfall. — Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICES SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 14, 1892, TO MAY 20, 1892.

A board of medical officers to consist of Lieut.-Col. WILLIAM H. FOREWORD, surgeon; Major JOSEPH R. GIBSON, surgeon; Captain HENRY S. TURNER, assistant surgeon, is appointed to meet at West Point, New York, June 1, 1892, or as soon thereafter as practicable for the physical examination of the cadets of the graduating class at the U. S. Military Academy and such other cadets of the academy and candidates for admission thereto as may be ordered before it.

The leave of absence granted MAJOR JAMES P. KIMBALL, surgeon, U. S. A., is extended one month.

Leave of absence for two months to take effect June 25, 1892, or as soon thereafter as his services can be spared, is granted FIRST-LIEUT. HENRY A. SHAW, assistant surgeon, U. S. A.

WILLIAM N. SUTER, assistant surgeon, U. S. A., to be assistant surgeon, with the rank of Captain, May 16, 1892, after five years' service in accordance with the Act of June 23, 1874.

FIRST-LIEUT. THEODORE F. DEWITT, assistant surgeon, U. S. A., resigned May 16, 1892.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 21, 1892.

S. W. HORWITZ, medical director (retired), granted six months' leave to go abroad.

P. A. LOVINGER, surgeon, detached from U. S. S. "Philadelphia" and granted two months' leave of absence.

R. P. CRANDALL, passed assistant surgeon, detached from the Naval Laboratory, Brooklyn, N. Y., and to the U. S. S. "Philadelphia."

E. S. BOGERT, Jr., assistant surgeon, detached from C. S. S. "Blake" and to the Naval Laboratory, Brooklyn, N. Y.

J. A. GUTHRIE, assistant surgeon, detached from Port Royal Station, S. C., and to C. S. S. "Blake."

H. C. ECKSTEIN, surgeon, granted leave of absence for six months.

MASSACHUSETTS MEDICAL SOCIETY.

ONE HUNDRED AND ELEVENTH ANNIVERSARY.

Meetings will be held in the building of the Massachusetts Charitable Mechanic Association, on Huntington Avenue, Boston.

TUESDAY, JUNE 7, 1892.

Section in Medicine, 2 p. m.—"The Relations of Bacteria to Influenza," by Dr. Henry Jackson, of Boston. "Pneumonia in the Recent Epidemics" by Dr. W. E. Fay, of Boston. "The Nervous and Mental Sequels of Influenza," by Dr. P. C. Knapp, of Boston. "A Revision of the Medical Nomenclature Employed in the Vital Statistics of Massachusetts," by Dr. S. W. Abbott, of Wakefield. Drs. R. H. Fitz, C. F. Folsom, A. L. Mason, J. H. McCollom, J. J. Minot, F. C. Shattuck, G. B. Shattuck, will take part in the discussions.

Section in Surgery, 2 p. m.—"Pathological and Clinical Investigations into the new Antiseptic Dermatol," by Dr. A. K. Stone, of Boston. "The Diagnosis and Treatment of Fott's Fracture of the Ankle," by Dr. L. A. Stinson, of New York City. Discussion by Dr. H. L. Burrell and others. "Acute Intestinal Obstruction: The Symptoms and Diagnosis," by Dr. F. C. Shattuck; "The Surgical Aspects," by Drs. John Homans, J. C. Warren, G. W. Gay, M. H. Richardson, J. C. Irish, A. T. Cabot.

Section in Obstetrics and Gynecology, 2 p. m.—"Résumé of 100 Cases at the Knowles Maternity, Worcester," by Dr. G. O. Ward, of Worcester. "Alexander's Operation," by Dr. W. M. Conant, of Boston. "Hydatidiform Moles," by Dr. G. A. Craigen, of Boston. "The Treatment of Inflammatory Diseases of the Fallopian Tubes, with Cases," by Dr. Edward Reynolds, of Boston.

The Shattuck Lecture, 8 p. m., by J. F. Alleyne Adams, M.D., of Pittsfield.

WEDNESDAY, JUNE 8, 1892.

At 9 a. m.—"The General Practitioner as a Gynecologist," by Dr. W. H. Pierce, of Bernardston. "An Outbreak of Trichinosis in Colorado," by Dr. F. H. Drew, of Shelburne Falls. "The Treatment of Compound Fractures by Modern Methods, with a demonstration of 'putting up' adapted to private practice," by Drs. H. L. Burrell and E. W. Dwight, of Boston.

The Annual Discourse, 12 p. m., by Frank W. Draper, M.D., of Pittsfield.

RHODE ISLAND MEDICAL SOCIETY ANNUAL MEETING.

The eighty-first annual meeting of the Rhode Island Medical Society will be held in Tillinghast's Assembly Rooms, 223 Westminster Street, Providence, on Thursday, June 2, 1892, at 10 o'clock, a. m. The Annual Address by the President, Dr. William H. Palmer, at 12:30. The annual dinner will be served in the adjacent hall, the Trocadero, following adjournment. Dinner tickets can be obtained of the Treasurer, Dr. George L. Collins. W. R. WHITE, M.D., Recording Secretary.

REDUCED RATE TO DETROIT.

The Boston and Albany Railroad will make rate of fare and one-third on the certificate plan from all coupon ticket stations to Detroit and return on account of the meeting of the American Medical Association. Tickets giving purchasers the benefit of reduction may be purchased June 3d to 7th inclusive. The rate per berth in sleeping car from Boston to Detroit is \$4.50. For sleeping-car reservations and full information in relation to train service, etc., address J. L. White, City Passenger Agent, 232, Washington Street, or A. S. Hanson, General Passenger Agent, Boston, Mass.

RECENT DEATHS.

JOHN MESSENGER, M.D., died in New York, on May 19th, at the age of seventy-three. He was born in Vermont and graduated from the College of Physicians and Surgeons, New York, in 1852.

MYRON N. BARCOCK, M.D., of Saratoga Springs, N. Y., died May 21st, aged seventy-three.

ALVIN JENKINS, M.D., M.M.S.S., died in Great Falls, N. H., May 3, 1892, aged seventy-nine.

WILHELM BRAUNE, M.D., Professor of Anatomy in the University of Leipzig, died April 29th.

Original Articles.

SOME OF THE RECENT ADVANCES IN BACTERIOLOGY.¹

BY H. C. ERNST, M.D.,

Assistant Professor of Bacteriology, Harvard Medical School.

THE amount of time that has been devoted to the solution of the various problems presented by our increasing knowledge of the micro-organisms is easily accounted for by a glance at what the development of this knowledge seems to promise. In the first place, the theories that are the result of the work already done, furnish what appears to many to be, the first rational explanation of what the infectious diseases are, how they are propagated, and suggest many ways by which they can be combated.

Theory, inference, and experiment all show with apparent conclusiveness that the micro-organisms are concerned in the production of many, if not all, of the infectious diseases. To deny such a conclusion at the present time, is to deny the power of the logical sequence of events to prove a case, and such a denial is nowhere, I believe, seriously attempted by any with sufficient training to speak with authority.

In searching for an explanation as to how the bacteria accomplish the results that are daily seen to be the result of their growth, these are the methods usually accepted: (1) By mechanical action; that is to say, the growth of the invading organisms to such an extent, and with such rapidity, as to block up or cut off the natural channels of communication with the affected part. Such an effect may be seen in many of the preparations from parts attacked by the bacillus of anthrax. (2) By such vigorous growth and strength of attractive power as to appropriate to themselves, and take away from the tissue-cells, the nutrition intended for the latter; as a result, producing a destruction of the tissue-cells by the process called necrosis. This effect is seen as the finish of the change in tuberculosis. (3) By the production, either directly, or by the combination of the elements remaining after the bacteria have taken what may be necessary for their development, of new basic compounds that play an exceedingly important part in the production of the harmful effects of disease, or, as is becoming more evident every day, in guarding the system from further invasion and protecting it from a future attack of the same disease.

It cannot be said that we have yet come to understand the action of these new compounds; but certainly a beginning has been made, and it is to some of these beginnings and the results that seem to be promised that I wish to call attention.

The general knowledge already obtained has taught an almost inestimable amount of important fact to the scientific mind, and has put preventive medicine upon a sound basis that has not belonged to it before. It may almost be said that if the knowledge we already have might be universally and intelligently applied, the problem of stamping out infectious disease would be solved; but such an application is impossible for many reasons, and it probably never will be so. It is not possible so to appeal to the average mind, that the isolation and strict treatment of a dear friend, even suffering from an acknowledged infectious disease, will

be allowed or bearable, and it is necessary, therefore, to search for something more.

This further advance has been in the minds of all those connected with the later methods of experimentation, and lies in the direction of attempts to prevent the appearance of the symptoms of an infectious disease after exposure to its virus or the arrest and cure of those symptoms after they have made their appearance.

Such attempts have, of course, been made from the time when medicine began, but have met with the smallest amount of success, so far as the use of drugs, as the term is commonly used, is concerned. The first efforts, with a knowledge of the bacteria and their action as a basis, were those in which the attempt was made to secure the attenuation of the virus of the disease, and then applying this modified virus in an attack against the full disease. The idea underlying this is the substitution of a disease of a milder type for that of the full strength, the attack of the milder form being supposed to protect the system against the virulent. This effort had been successfully carried out for years in the common vaccination against small-pox, in which case a disease of a similar type (cow-pox) is substituted for the far more fatal and disfiguring one of small-pox. Nature furnished the milder form of the disease, and the virulent as well, and accident showed the proper method of combining them; in the series of experiments of which I now speak, Nature also furnished the virulent disease, but it has been sought to *create* a milder type that would afford protection against the stronger.

Such attempts have been carried on with much enthusiasm, and with, at least, partial success in such diseases as anthrax (called malignant pustule in man) and rabies. They represent the direction in which the efforts of Pasteur and his followers were earliest turned; and the success obtained, together with the facts revealed in regard to disease, urges their continuance. They have not thus far, however, seemed to define any general principle upon which further work may be based, nor do their results seem to serve for a foundation for reasoning, except in regard to the individual case that the experiments cover.

The further development of our knowledge has led to experiments in a different direction; and, as a result of these, came the application of Koch's remedy, tuberculin, the work with which made so much excitement during the last year. This material is obtained from a different source, and illustrates a different principle from any of the preceding. It is the product of growth — not of the bacilli themselves — and consists essentially of the nutrient material in which the bacteria have grown, freed by filtration from the bacteria, but containing all the new elements that have resulted from their growth. The unfortunate necessity for a premature trial of this material has clouded the results and prejudiced the judgment of many observers so that its true value is not yet by any means worked out.

So far as actual cure of the disease against which it is directed, little has been accomplished by its use; which is not surprising when we remember that, as used, it was in its crudest form and made up of many ingredients the nature of which is but just becoming recognized. There are many points in regard to it still to be worked out; the hurtful ingredients are to be separated, and the healing agency, if present, to be isolated and tried, before this method of reaching the

¹ Read before the Boston Society of Natural History.

end in view is to be thrown aside as useless. As it is, there seems to be strong reason to feel that it may serve as a valuable aid to diagnosis in the early stages of the disease, especially in cattle,² as a recent writer points out after a complete review of all the reported experiments in this particular direction; and it certainly appears from the more recent records that a certain amount of definite good has been accomplished in the actual treatment of tuberculosis with it.

The employment of this material illustrates the second method by means of which it has been sought to secure curative effects in infectious disease; that is, by the application of the products of bacterial growth in the laboratory, to the destruction of the organisms that produced them, or at least to the arrest of the development of these organisms.

But certain facts shown by experiment several years ago, and constantly developed since that time, have put inquiries upon a new track, one which forms the third branch of the inquiry, and that seems to promise much as the result of its intelligent following out.

It is upon these facts that the newer theories in regard to immunity depend, and it is to the application of what is learned in forming these theories to the treatment of disease that especial interest lies.

It is a long time since the theory that immunity might be due to the presence of a deterrent substance in the blood entered the minds of scientific men,—this substance being something that would prevent the growth of the invading bacteria,—but it has been an exceedingly difficult matter to secure evidence upon such an important point. The first experimental researches were negative (Grawitz and Gamaleia); but, in 1884, Grohmann showed that fresh serum exerted an attenuating influence upon the bacilli of symptomatic anthrax; Fodor found that fresh blood destroyed them; while Nuttall established the fact that organic fluids (like serum, aqueous humor, pericardial fluid), really possessed the power of destroying bacteria, and that this germicidal action was taken away by raising these fluids to a temperature of above 50° C. Buchner showed that this power rested solely in the serum, and that the breaking up or mixing in of the blood-corpuscles masked or diminished its activity. He also showed that repeated freezing divided the serum into layers of which the lowest was the most active against bacteria; that this power of the serum is destroyed if diluted with distilled water or if it be dialyzed against it. After Buchner, the most important work has been done by Ogata and Iasuhara, and Behring and Kitasato in showing the great influence of the fluid portions of the animal tissues in the acquisition of immunity. According to the work of these authors, immunity is due to the action of albuminoid substances, called by Hankin, defensive proteids, which have the power of destroying pathogenic bacteria, of attenuating them, and of destroying their toxic products.

It is necessary that one should have a clear idea of these defensive proteids to understand what extreme importance is to be attached to their discovery and the prosecution of researches upon them.

First, in regard to "germicidal proteids." Certain animals have in their blood and the other fluids of the body substances endowed with a very considerable germicidal action; and an example that has been better studied than some others is found in the blood of the white rat. These animals are refractory to inocu-

lation with anthrax, and the reason for this immunity so virulent a disease has been found (Behring), to exist in the fact that the animal's blood-serum destroys the bacterium. By comparative tests, it was shown that two and a half cubic centimetres of rat's serum would have the same germicidal action as would the same quantity of corrosive sublimate in the strength of 1 to 1,000, or of carbolic acid 1 to 50. To appreciate this, it is necessary to consider another quality, the toxic action of these materials upon the animals; when it appears that the sublimate and carbolic acid will kill the animal in a dose five to seven times smaller than is necessary to secure their germicidal action and cannot therefore be thought of for internal antisepsis, whilst the germicidal protein is present in quantity sufficient for its perfect activity in the serum of the perfectly healthy white rat. This is the most striking and valuable property of these defensive proteids,—that they are the least toxic of all germicides known, leading up to the far more important fact that it seems possible to employ them in active measures for the treatment and cure of infectious disease.

Many points are still to be made out; for instance such an apparent contradiction as that the serum's germicidal power does not in all cases correspond with the natural immunity of the animal that furnishes the serum, but thus far investigation has only served to show that these apparent discrepancies can be easily explained.

The second class of these proteids is made up of the "attenuating" varieties, the existence of which was first suggested by the fact that the bacteria of symptomatic anthrax were attenuated in virulence when injected into animals refractory to the disease, at the same time that their vitality was not interfered with. It is to the work of Ogata and Iasuhara that we owe the first experimental determination that this attenuating property lay in the serum of the animals experimented upon, and not elsewhere. Such an attenuating action upon bacteria would explain very naturally the immunity of the animals in whose blood it was found; and the authors by further experiment showed that this property remained to the serum *after* its removal from the body of the animal in which it was formed, and could be made to serve as a retarding influence, and even as a curative agent, in animals inoculated with true anthrax.

The existence of these attenuating proteids has been confirmed by other observers in the case of anthrax and in other diseases, and the establishment of the facts would be exceedingly important if this were all; but further research has shown the existence of a third class of these proteids. We know now, not only that there are germicidal and attenuating, but also "antitoxic proteids"; and their discovery is the most important of all. The former classes act directly upon the bacteria themselves,—either by actually destroying them or by so limiting their development in the animal body that their growth becomes a matter of slight moment as affecting the health of the individual attacked.

The first announcement of results in this direction was made by Behring and Kitasato, in 1890, at the time of the excitement in regard to tuberculin, and was so overshadowed by this excitement that their true importance was but tardily recognized. They had found that the blood of rabbits protected against tetanus had the power of destroying the toxic alkaloid of teta-

² See Eber's article, *Cent. f. Bact.*, 1892, p. 263.

nus, tetanin, in the lifetime of the animal attacked, and that by the application of this fact it was not only possible to protect an animal against an inoculation of the tetanus bacilli, but also to cure it after this inoculation and the appearance of the symptoms of the disease.

The importance of such results, especially as they have been repeated and confirmed by independent observers, can hardly be overestimated. They mean an absolute revolution in our ideas, and a possibility of reaching the long-sought goal, — the successful treatment of diseases that have heretofore compelled the attendant to stand helpless before their progress.

Almost in the same week with the announcements of Behring and Kitasato with reference to tetanus, came those of Frenkel and Brieger upon diphtheria. Tizzoni and Cattari have completely confirmed the work upon tetanus; and, if later reports can be trusted, the method of cure has been successfully applied in man in six cases of tetanus (lock-jaw) that there is no reason to suppose would have terminated otherwise than fatally, as such cases almost invariably do.

Similar results have been obtained in animals in the case of some of the suppurative bacteria,— in anthrax, in swine-erysipelas; and the variety and extent to which experiment must go in the elucidation of the points brought up by these new facts is almost unlimited. At the same time, there is more reason than ever to feel that investigation is upon the right track, and that finally the promise that now looks so fair, will be fulfilled, and that there will be means secured at last for the successful combating of the effects of the most virulent of the diseases of modern times. For, as will be readily seen, we have at last caught sight of materials, effective for the destruction of the bacteria or their toxic products, that at the same time will leave the animal tissues unharmed after their application. Thus far, we have been able to employ for such a purpose, only materials that were in themselves destructive to the vital organism, and the remedy when effectively employed has been worse than the disease.

THE THIRD YEAR OF THE INFLUENZA EPIDEMIC.²

BY J. H. AYER, M.D.

I FEEL that no apology is needed for presenting the often-discussed subject of influenza believing that every contribution of facts *made at the time*, which a discussion brings out may be of value to us and to future students of the epidemic.

We are grateful to Dr. Rush for his description of the epidemic as he saw it in Philadelphia a century ago; and we regret that his contemporaries did not write out their experiences for our benefit.

Dr. Rush stated that epidemic influenza visited Philadelphia in the autumn of 1789 and lasted six weeks. It relapsed in April, 1790, but less severely, and remained till the early part of June. It finally disappeared the following winter in the form of a mild relapse.

Now, a century later, it had been predicted by the profession as well as the laity that a reappearance of epidemic influenza in this — the third year — would not be a serious matter. On the contrary, however,

its course has been severe, and it has proved disastrous in many of our homes.

Influenza, in this neighborhood, became epidemic about December 20, 1889, lasting more than seven weeks. It relapsed about January 1, 1891, and continued till the early part of June. The present relapse began early in December, 1891. Since the middle of February there have been very few new cases, but yet in March, there was still sufficient evidence of its presence in our midst.

The mortality statements of the city of Boston show that the first attack was most fatal between December 28, 1889, and January 18, 1890; the second attack was most dangerous to life in May, 1891; the third attack (the present relapse) showed the greatest number of deaths between December 6, 1891, and January 30, 1892.

The disease has not been entirely absent from our midst (in all probability), since December, 1889, although for successive months sporadic cases only have been present.

What have been the characteristics of the different attacks?

In past epidemics of influenza, the symptoms have been dissimilar. Dr. Rush, in his account, says: "It was remarkable that those who had the disease chiefly in the breast last year, complain now chiefly of their heads; while those whose heads were affected formerly, now complain of their breasts."

The epidemic, as we have seen it, has shown a diversity in the relative importance of the neuro-muscular, respiratory and gastric symptoms in the different attacks.

The first attack was pandemic and acute. The analysis made by Dr. Clouston showing that 97 per cent. suffered from neuro-muscular symptoms, 77 per cent. from respiratory symptoms, and 55 per cent. from alimentary symptoms was perhaps applicable to cases in this vicinity; the neuro-muscular symptoms being the most prominent and causing most suffering.

The second attack, which came in the form of a relapse a year ago, did not attack the whole community at once, but occupied more time in seeking out its portion. There was perhaps no alteration in the proportion of the three classes of symptoms, for the neuro-muscular type was still the prominent one, but its symptoms were less acute and more prolonged. The depression of the nervous system and the accompanying and subsequent exhaustion were the marked features at this time. Neuroasthenia, with depression of spirits, apprehensiveness and mental instability stood out in such broad relief in cases noticed last spring that many German authors described influenza as a *Nervenkrankung*.

The present attack (second relapse), which started at the beginning of the third year, has been marked by increased importance of the respiratory symptoms. My notes of patients who have recently undergone a second or third attack show a decided change in type. It seems to me that the respiratory symptoms are now relatively more prominent than neuro-muscular symptoms have been in the past.

We will briefly consider the symptoms of the present attack:

(1) *Neuro-Muscular Symptoms.* — Very few patients have suffered from influenza this year without being conscious of muscular and neuralgic pain. Migraine, sciatica, lumbago, and pleurodynia have been com-

¹ Read before the Boston Society for Medical Observation, March 7, 1892.

mon; delirium, meningitis, and a tendency to the psychoses have not been entirely absent, but, on the whole, the nerve symptoms have not been sufficiently severe to impress the observer with the theory that influenza now is essentially a "nerve disease."

There has been less depression of spirits and less worry. The apprehensiveness I have seen this year has not been an unmixed evil, as it has caused patients to take proper care of themselves, and to follow implicitly the physician's advice regarding confinement to the house.

Irregularity of the heart's action of nervous origin has, perhaps, been more prominent this season, and also spasmodic cough, which will be mentioned later.

Again, this year, I have noticed a tendency to persistent localized pain from very slight accidents.

(2) *Respiratory Symptoms.* — We feel that catarrhal irritation of the upper air passages has been the most prevalent form, although from the middle of December to the end of January it seemed almost impossible among the elderly and debilitated to keep the catarrhal trouble from extending to the lungs, and there were at that time numerous cases of acute bronchitis and pneumonia, dangerous from the outset.

The symptoms in the majority of cases, however, has been those of laryngitis, tonsillitis, and bronchial catarrh. I have seen less extension of catarrhal symptoms to the middle ear or to the nasal fossae. Hoarseness of several days' duration, the feeling that there is a "lump in the throat" causing slight dyspnoea, and a harsh, hacking, spasmodic cough have been the causes of frequent complaint.

As with this cough, one rarely finds important signs in the chest on physical examination, it is necessary to consider these symptoms as partly catarrhal and partly nervous in character. I saw a marked case of neuro-respiratory symptoms early in the present relapse, where there was "constriction of the chest" coming on suddenly, and often waking the patient out of a sound sleep with dyspnoea and spasmodic cough.

(3) *Alimentary Symptoms.* — In looking over my cases I have been surprised to find how little prominence has been shown by gastro-intestinal symptoms of late. In very few cases was vomiting present at the outset, and with only one patient was gastric irritability the most prominent symptom throughout the attack, and here I suspected the existence of organic disease of the stomach. In several cases, however, there was bilious vomiting during some portion of the attack.

Intestinal diarrhoea was noted in a few cases only, and in none was it an important symptom.

I feel that the relative importance of symptoms connected with the digestive canal has been much diminished of late.

Immunity. — There seems to be no rule as to the susceptibility to repeated attacks. The majority of the members of this community have not suffered from three distinct attacks of epidemic influenza, and a goodly number have never been affected.

Susceptibility of Age and Sex. — Elderly people, although they have suffered more severely from the effects of this year's epidemic, may not necessarily have been attacked in larger proportion than in preceding years. In a home for aged people in this city all the inmates, twenty-one in number, were attacked last spring, thirteen of them severely, but all but three escaped this year's attack.

Foreign writers have stated, that a larger proportion of children have suffered from influenza during the present season. It does not seem to me that this has been the case in this neighborhood, although sixteen deaths from influenza under the age of five years have been reported during the last three months in this city.

It has also been stated, that a much larger proportion of women has been attacked during the present relapse, and the mortality-rates of the city would seem to confirm this statement. I think I have seen a like number of cases in both sexes.

Ruhemann, in Berlin, makes the statement that those whose occupations obliged them to be in the open air — soldiers, letter-carriers, policemen, firemen and doctors — were more susceptible the first year; but that now a much larger proportion of those with indoor occupations (especially women), are affected.

Febrile Disturbances. — Probably few cases of late have been ushered in by a well-marked chill, but chilly sensations lasting several days have been frequently noted. High temperatures at the outset have not been common except with acute lung trouble. A temperature of 106.2° was noted in one case at the very outset, which proved fatal in thirteen hours, from pulmonary congestion. In most cases of late, the thermometer has been principally valuable in indicating the new phases in the progress of the case.

Suddenness. — Unlike the epidemic attack of two years ago it has been rare for severe symptoms to appear at the onset. We have seen very few patients suddenly struck down by the epidemic. Convulsions have been rare at the outset.

Eruptions. — Probably there has been less erythema, erysipelas, and herpes zoster than in previous attacks. Authors have referred to the puzzling difficulty in making an early diagnosis between some cases of influenza and scarlet fever. I saw recently a very irritable child suffering from influenza with severe throat symptoms, where there was at times a suspicious redness of the skin, which, however, was found to disappear when the child could be examined in sleep.

Chronic Cases of Influenza. — *Origin have not necessarily been unfavorably influenced by the recent relapse.* — I can mention, in proof, a severe case of neurasthenia and sciatica, of over two years' standing, where the greatest gain has been made during the past season.

I see frequently a patient who has suffered severely with muscular and articular rheumatism since he was taken down with influenza December 25, 1889, but who has improved more rapidly during the past winter than in any time during the past two years.

A patient with albuminuria following painful influenza of the neuro-muscular type has been under my observation twenty-two months. His debility and prostration have left him, and he is able to work, as a jig-sawer, his full time daily; but the urine still contains a trace of albumin and a few casts and occasionally a decided trace of sugar. He has no symptoms of kidney disease, and during the past winter has been as well and as strong as ever.

These three patients were all of middle age and were not attacked by the recent relapse of influenza.

Recurrence and Persistence of Symptoms. — There has been a marked tendency to recurrence, and we have never felt certain that the disease has taken

its farewell of the patient. There has been so much exhaustion that progress, when uninterrupted, has been very slow — especially in elderly and feeble patients. Many patients have sent for their physician merely to ask, "Why don't I improve more rapidly?" but the delay in recovery does not seem to depress them so much as it did last year, and they are not unhappy, when they are told they must be content, with a slight gain from week to week.

Prognosis, like everything else connected with influenza, has been uncertain. Many of my cases have turned out unexpectedly well, the danger which seemed imminent from threatening cardiac failures and intense prostration having generally been overrated.

In Regard to Treatment, I wish to say but one word — in favor of oxygen in the acute pulmonary affections of the asthmatic type.

OPERATIVE TREATMENT FOR THE RELIEF OF CHRONIC SUPPURATIVE AFFECTIONS OF THE MIDDLE EAR: REPORT OF THREE CASES.¹

BY FREDERICK L. JACK, M.D.,
Assistant Aural Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

CHRONIC suppurative inflammation of the attic of the tympanic cavity may justly be considered a serious trouble. Especially is this true if the disease begins during childhood and continues for a long period. In many instances caries of one or more of the ossicles, is present, with or without disease of the bony walls of the attic, and the small space in the cavity is crowded with granulation-tissue or polypoid growths, causing defective drainage and consequently retention of septic matter. Exacerbations are in many cases frequent, and at these times the possibility of extension of the middle ear inflammation to the meninges of the brain or mastoid antrum in a constant source of danger. In the majority of instances the hearing power is practically gone, but a point of far greater importance is the danger to life itself. Indeed, a fatal termination is to be expected in a considerable number of these cases. In the light of what has been demonstrated within a few years, and realizing the possible effect of neglecting or ineffectually treating such a trouble, does it not seem somewhat surprising that the disease is allowed to progress unchecked when surgical interference has proved very successful in the majority of instances? The result of the operation has been either rapid cure or at least such improvement as to make the disease amenable to after-treatment.

I desire, therefore, to call attention to what has been done in aural surgery towards the relief of this class of almost hopeless cases. I believe it to be of general interest, for the rule of procedure is the common-sense surgical one of removing diseased bone or whatever obstruction is found to free drainage.

As far back as 1877, Dr. Kessel, of Jena, published the report of a case in which he removed the drum membrane, malleus, incus and stapes.² He cited this case to show that the ossicles could be removed without danger. As to the pathology of the affection, Professor S. Moos, of Heidelberg, is of the opinion that the hammer is most frequently affected, and that often before caries can attack the anvil, it is exfoliated,

being loosely held in place by the adjoining ossicles and tissues. The stapes is most rarely affected. He further states that he has never observed or seen described a case of primary caries of these bones; that the mucous membrane must first be diseased before caries can attack the ossicles.³

On July 20, 1886, Dr. Samuel Sexton, of New York, in a paper read before the annual meeting of the American Otological Society, described "A New Operation for the Radical Cure of Chronic Purulent Inflammation of the Middle Ear Tract." Previous to that, a paper written by Dr. Schwartz, in 1885⁴ gives a résumé of the literature of operations on the transmitting mechanism of the ear. Since that time the application of this line of surgery has developed very rapidly.

I have endeavored to summarize the results in the few recorded cases since Schwartz's paper in 1885; and I add the report of three cases operated upon by myself for chronic suppuration of the middle ear.

In 1887 Dr. Sexton reported nineteen cases of this disease, with results as follows: In five cases a cure took place in less than one month; in two cases, in two months; in two cases, in three months; in one case, in six months. In five cases, still under observation, there was slight improvement; in three cases still under observation, there was no improvement; in one case the treatment was not continued. He does not mention in any case the duration of the otorrhoea, except in a general way, that it had long continued. The malleus alone was removed in six cases and the malleus and incus in ten. He estimated that the hearing power was increased from 75 to 100 per cent. in the cases cured.

Dr. Burnett, of Philadelphia, before the American Otological Society last July, reported a case of seven years' duration in which he excised the drum membrane and malleus. In thirteen days the discharge from the ear ceased. Three months from the time of the operation a cicatricial membrane was found over the promontory. No discharge. Hearing increased from nothing to whispered words at fifteen feet.

In my search for information as to the frequency of purulent inflammation of the superior portion of the tympanic cavity, I found, in a paper by Dr. Alexander Randal, of Philadelphia, "Notes on the Shrapnell Perforation,"⁵ a total of 120 cases among ten thousand patients — somewhat small number. If, however, to this number is added those cases with perforation of the drum membrane, my impression is that the number would be largely increased.

From 1885 to 1890 inclusive, there were treated at the Massachusetts Charitable Eye and Ear Infirmary for chronic purulent middle ear disease 3,795 cases out of 21,818 patients applying for treatment. Among 8,337 of all cases seen in the last two years, from 1889 to 1890 inclusive, there were noted 1,020 patients with chronic purulent trouble, and of these 94 cases of perforation of the fiscid membrane, — almost 10 in every 100 cases. This is practically the same ratio per thousand for all ear patients as that reported by Dr. Randall, and illustrates the relative frequency of this affection in suppurative middle ear disease.

Although without statistics to substantiate any fig-

¹ Archives of Otol., March, 1885.

² Deutsche Chirurgie, Stuttgart.

³ In two of these cases suppurative inflammation seemed to continue in one because of caries of the anvil, and in the other in consequence of the retention of the incus which could not be found.

⁴ American Otological Society, 1886.

⁵ Read before the Boston Society of Medical Observation, March 7, 1882.

⁶ Archiv. f. Ohrenheilk., vol. xliii.

ures, my memory leads me to believe that in a large proportion of the cases of suppuration, under my observation, the disease was confined to the attic or superior portion of the tympanic cavity. Most of the writers on this subject have advised the removal of the drum membrane together with the diseased ossicles. As the membrane forms a natural protector of the tympanic cavity I am impressed with the importance of exposing as little as possible of the mucous membrane to the effect of cold or what by chance may find its way into the ear. The cicatricial tissue closing the opening has been shown to form in many instances a vibrating surface capable of transmitting its movements to the stapes. Where the incus remains, its long process, through contact with this tissue, increases the hearing power, and in a measure also protects the delicate mucous membrane beyond. In my limited experience with this operation, but somewhat wider observation of the work accomplished by others, I have failed to find any evil effects which could be attributed to the operation, whereas the results obtained, both as regards effecting a cure and improving the power of hearing, have been extremely favorable. I believe that in all these cases every effort had been previously made in the way of both vigorous and mild treatment. I wish, however, in no way to be understood as advocating operative interference even when rough bone is demonstrated until the usual treatment has been thoroughly tried.

I might say in regard to the instruments necessary for the operation, that a series of triangular-shaped knives, bent at various angles, seemed sufficient for most of the tissues necessary to be separated. A case of Schwartz's curettes enables the walls of the attic to be cleared of granulation-tissue, great care being necessary in case of caries not to enter too far, the anatomy of the parts to be kept clearly in mind all the time. The ear must be perfectly illuminated, during the operation. In addition, a small pair of ear forceps for removing the completely excised ossicles is especially to be recommended, as it is more easily directed by the hand and less likely to do harm by undue force. A small olive-tipped probe is very necessary in determining the location and extent of the disease. A small hook is also useful in finding any adhesions which may remain after the operation. They should all be separated before attempts are made to remove the ossicles. All antiseptic precautions were carefully observed. Cocaine has proved a valuable aid in clearing from bleeding the very small field of operation. For the steps in the operation there is little I can add to the description given by Dr. Kessel⁷ or by Dr. Sexton.⁸

The house records of the following three cases occurring at the infirmary during my service for Drs. Green and Blake briefly illustrate what has been said:

CASE I. Mrs. M. F., forty-two years old. Has had a chronic, purulent discharge from the right ear for forty years, during which time it has never wholly ceased, considerable tinnitus. No pain, advised to enter the house for operation. Examination of the patient showed a slight discharge from the ear. Large perforation of the membrana tympani. Head of malleus rough to the probe and adherent to the promontory.

September 10, 1891. Patient was etherized and the malleus freed from all its attachments, which were

very firm and dense around the head of the bone and handle, and then removed with forceps. The ear was thoroughly syringed with a corrosive sublimate solution (1 to 2,000), and tightly sealed with absorbent cotton and a collodion dressing applied. Examination of the malleus revealed caries of head and short process. Most of the manubrium had sloughed away.

September 14th. There had been no pain since the operation. Dressing removed for the first time. The ear was found absolutely free from all discharge. Evening temperature 99° for three nights, normal the rest of the time.

September 16th. Ear perfectly dry. Meatus kept closed with antiseptic cotton.

December 5th. At the end of nearly three months, middle ear found dry and the mucous membrane white in color. Hearing greatly improved for conversation. W = 7%. No tinnitus.

CASE II. Miss L. V., about fourteen years old. On November 11th she entered the out-patient department for the relief of an otitis media suppurativa of the left ear, which had lasted for several years. Malleus was carious and had a large polypus growing from the handle. Bone very loosely held in place and partly destroyed by necrosis. Under ether, the malleus and polypus were removed with the snare and a few granulations in the upper part of the middle ear cavity were curetted. The meatus was then closed with cotton after being syringed with a corrosive sublimate solution (1 to 3,000). Evening temperature 100°.

November 12th. Considerable foul-smelling discharge from the ear. The patient was unable to bear the removal of the granulations so they were touched once a day with perchloride of iron. Syringed with a 1 to 5,000 solution twice a day, and followed with instillations of resorcin and alcohol. Temperature 99°.

November 16th. Amount of discharge much less. Referred to out-patient department; since that time nothing has been seen of her.

CASE III. Miss L. C. B., thirteen years of age. Had been troubled with chronic purulent discharge from the left ear for ten years; at times annoyed with dizziness. Examination showed patient in poor general condition and anemic; large destruction of the posterior segment of the drum membrane; malleus firmly adherent to the promontory; and the probe revealed a small spot of necrosis on the anterior edge of the handle of the hammer. Granulations were found covering an area of diseased bone on the inner wall of the middle ear cavity posterior quadrant.

October 1st. The patient was etherized, and an operation of half an hour performed. Malleus removed after some considerable difficulty, due to thick bands of tissue around the head of the bone. The granulations on the inner wall were curetted. Collodion dressing applied.

October 2d. Rallied from the ether well. Complained of some headache and slight pain in the ear. Temperature 99.8°.

October 3d. Dressing removed, and middle ear found filled with foul pus. Syringed three times daily, and powdered with iodoform. Evening temperature 99.5°.

October 5th. Discharge less. Slight headache and no pain in the ear. Temperature normal.

October 12th. Amount of discharge is very small. Ear wiped dry, and powdered once in two days.

⁷ Archiv. f. Ohrenheilk., vol. xiii.

⁸ Transactions of the American Otolological Society, 1886.

October 17th. Ear perfectly dry in the superior portion. After omitting treatment for ten days, slight moisture only over spot of necrosis in lower portion of the tympanic cavity. No change in hearing.

January 2, 1892. Ear without discharge. No complaint of dizziness. Hearing the same as before the operation.

In Case III healing was delayed by the condition of the bone concealed by the granulations on the inner wall of the tympanic cavity, although cured as thoroughly as possible. All discharge disappeared from the attic in a few days after the operation. In contrast to this case is the one reported first, in which, in spite of the long continuance of the suppuration, the ear healed almost immediately after removal of the carious malleus. I think the two cases illustrate the two classes into which suppurative processes in the middle ear may be divided, considered from the point of time necessary for recovery after the operation. First, I would class as simple cases those in which necrotic bone is confined to one or more of the ossicles, the bony walls of the middle ear cavity being perfectly free from such a disease; second, as complicated, those cases in which some part of the bony wall, together with the ossicula, is diseased. The most speedy cure may be very naturally expected after operation in the first variety of cases, for the simple reason that everything interfering with recovery is removed. Experience has shown that the ears heal almost at once without subsequent treatment being necessary. In the second class of cases healing is necessarily delayed, depending largely upon the seat of the diseased bone in the tympanum.

Removal of the ossicles and the membrana tympani will not cure every case of chronic otorrhea; but I am certain that many may be cured and the rest relieved by operation. Of the cases mentioned in this paper (twenty-three in all), twelve were cured in three months or less time; one in six months; five cases were improved; three cases were not improved and two passed from observation. As every variety of local treatment in most of the cases had previously been faithfully tried, it seems to me that the results of the operation have been most satisfactory, and that from the cases reported we may draw the following valuable conclusions:

(1) The removal of the drum membrane and ossicles is attended with little annoyance to the patient, proof of which is sufficient to warrant the performance of the operation as the only means of cure in many cases.

(2) The operation often produces marked improvement of the hearing.

(3) Satisfactory results may be expected towards the relief of tinnitus and vertigo.

(4) The results of the operation seem to be permanent.

Although not the chief purpose of this paper, I am tempted at this point to speak of operations on non-suppurating ears. The possibility of hearing well without the membrana tympani, malleus and incus has been successfully demonstrated in a number of cases; and this suggests what operative procedure may be expected to do in some cases of deafness due to hypertrophic catarrh of the middle ear without fixation of the stapes. The distressing symptom of tinnitus has been relieved by the same operation. It has also been done with success in certain cases of disturbance of

equilibrium from pressure transmitted through the middle ear. There are a few cases recorded in which the hearing has been in good part restored by removal of the membrana tympani and one or more of the ossicula. The successful operations have, however, been as yet too few to enable us to establish a rule.

A CASE OF EMPYEMA WITH RECURRENCE AFTER APPARENT RECOVERY.¹

BY S. H. AYER, M.D.

EARLY in the morning of January 4, 1890, I was called to see Mrs. P., when I obtained the following record. The patient was twenty-five years old, married, and had a good family history. Had had scarlet fever when a child. About nine o'clock in the evening of December 31st she was seized with the grippe. The following day symptoms of miscarriage began to show themselves, she being six months pregnant. The patient finally miscarried at eleven o'clock in the evening. She was attended by a homeopathic physician. Patient remained comfortable until the morning of January 3d, at which time she was seized with extremely sharp cutting pains throughout left chest accompanied by much dyspnea. The pain continued throughout the day and night, and as the physician in charge gave nothing that seemed to afford any relief, the husband decided to change doctors, and I was accordingly summoned.

It was 4.30 A. M. when I arrived at the house. The patient was apparently suffering intensely, and was in a very much exhausted condition. Pulse 120, temperature 101.4°, respiration 40. A hurried physical examination of the chest showed flatness with bronchial respiration in lower half of left back. A quarter of a grain of morphine was given by the mouth, and a poultice of mustard and flaxseed applied to whole left side, back and front.

At 8.30 A. M. I returned, and found that the patient had been dozing since six o'clock. Morphine, one-eighth of a grain, had been given twice during my absence. Lochia scant, whiskey and digitalis were ordered. Pulse 128. At 5 P. M. the pulse remained the same, respiration 32. Patient was very drowsy, and pupils were somewhat contracted. There had been no pain to speak of during the day. Numerous fine moist rales were heard in the lower half of left axillary region.

January 5th. Pulse 112, temperature 100.8°, respiration 36. Pain in side was gone. Took nourishment well through the night. The cough and expectoration were very slight, the latter being thick and tenacious. The tongue was moist and had a thin whitish coat. Patient complained of pain and tenderness in hypogastric region, the knees being drawn up. At 5 P. M., pulse 126, temperature 102.4°, respiration 36. There was marked tenderness over the uterus and also in both iliac regions. Vaginal examination found the passage hot, or somewhat open, moving of uterus painful. Lochia somewhat scant and slightly offensive. Iodoform was applied to vaginal outlet and the pain was controlled by morphine.

January 6th. Pulse 124, temperature 101.8°, respiration 28. Patient feeling much better. Abdomen

¹ Read before the Boston Society of Medical Observation, March 7, 1892.

nal pain and tenderness very much less. At 5.45 p. m., pulse 126, temperature 102.4°, respiration 37.

January 7th. At 9 a. m., pulse 100, temperature 100.2°, respiration 36. Patient was apparently much improved. Whiskey was reduced. The abdomen, however, was still somewhat tender, and poultices were accordingly kept on.

January 8th. At 12 m., pulse 98, temperature 100.6°, respiration 40. Some diarrhea, right cheek quite flushed, abdomen still tender. A partial physical examination of chest revealed dulness, merging into flatness below a point located in third left interspace in axillary line. Respiration absent over this area. The heart sounds were heard loudest at a point directly below the sternum. The back was not examined.

January 9th. At 12 m., pulse 96, temperature 100.8°, respiration 30. The tongue was clean, and there was apparently no abdominal tenderness. In the third right intercostal space, about one inch from edge of sternum was heard a to-and-fro friction sound, synchronous with the heart beat. With the patient lying on her right side percussion showed flatness in left back up to spine of scapula, with moderate bronchophony but no vocal fremitus. Percussion over left infra-clavicular region was tympanic.

January 10th. At 12 m., pulse 96, temperature 99.2°, respiration, 34. From this time to January 16th condition of patient remained about the same, the respirations keeping up from 30 to 36, pulse from 96 to 108, and temperature 97.2° to 100°. Tincture of iodine was applied to chest and back on left side, and on January 17th the patient was removed to St. Elizabeth's Hospital. The physical examination at this time was as follows: Position of patient prone, percussion over left front was tympanic down to third interspace, at which point and below it in mammary line, was flatness and absence of respiratory murmur. Respiration was diminished above third space on left side. Percussion over whole of left back was flat. Respiratory murmur and vocal fremitus were absent. Apex beat of heart was heard loudest in median line of body just below ensiform cartilage. The patient was given liquid diet, and tincture of digitalis and citrate of potash were administered.

January 19th, Dr. George E. Thompson saw the case with me, in consultation, agreeing with me in the justifiability of aspirating. A hollow needle, one millimetre in diameter, was accordingly passed into the sixth interspace just back of the axillary line, and one ounce of laudable pus withdrawn. There was no shock and very little discomfort from the operation.

The following day Dr. Kingman saw the case with me. In order to allow the patient to escape, if possible, the making of a permanent opening into the chest, two trocars were introduced, the latter being one of the largest size. Poor success followed this procedure, only a few drops of pus working through into the aspirating bottle with the larger, and practically none with the smaller. There was considerable pain associated with the passing of these trocars, but, nevertheless, the patient was quite comfortable the next day. The temperature then began to rise slightly, reaching 102.4° on the evening of the 21st. The to-and-fro sound in the third right interspace remained.

January 24th. The examination of the urine being negative, save a moderate diminution of the chlorides, the patient was etherized and the following operation performed, Dr. Kingman assisting. A hollow needle

was first passed into the chest, through the sixth left interspace at a point directly behind the posterior axillary fold. Pus showing itself again through the needle, and, using the latter as a guide, a permanent opening was made into the chest. Fully two quarts of pus were evacuated, containing numerous large pus clots the size of one's thumb, thereby accounting for the poor results obtained on passing the trocars four days before. A double rubber drainage-tube three-sixteenths of an inch in diameter, was inserted, and the cavity washed out with a solution of chlorinated soda (1 to 20). A dressing of iodoform gauze, rubber tissue carbolized gauze and cotton batting was applied.

The following day percussion was tympanic over the whole left front, but the heart sounds had apparently not changed their locality. The after-treatment, though finally satisfactory, was not entirely smooth sailing. Several times the cavity was found not to be draining sufficiently, and on removing the tubes, large pus clots would be found drawn into same, completely obstructing the outflow of any fluid behind them. In spite of these drawbacks there was steady improvement. Respiration increased over the left chest, being heard on February 4th down to the nipple. Numerous friction rubs were also heard in left infra-clavicular region, as also in mammary and axillary regions. The apex beat was heard loudest just to left of sternum. The respiratory murmur was heard in left back down to a point one inch above the lower angle of the scapula. The chest was washed out daily with chlorinated soda solution, and the cavity measured from time to time.

The case proceeded well; the capacity of the cavity gradually diminished; the discharge lessened in amount, becoming on February 28th mostly of a serous character, at which time one tube was removed. I should have remarked that the solution of chlorinated soda had been followed by one of compound tincture of iodine (1 to 7) since February 18th. March 7th, the cavity held thirteen drachms. Six days later the second tube was removed, the cavity measuring three and three-quarters inches in depth. A soft rubber tube, four inches long was inserted, and drawn out about three-eighths of an inch daily, it being removed permanently March 21st. The sinus apparently healed nicely, and the patient left the hospital on April 1st, there being simply a small granulating surface the size of a silver three-cent piece, over the site of the external incision.

The patient's health remained excellent throughout the months of April, May and part of June. So good in fact, that in May she went to work at dressmaking for three weeks.

On the evening of June 28th, she came into my office with the statement that for the past six days she had not been feeling well. Malaise was really the only symptom I could obtain. The pulse was quickened, and the temperature was 102.4°. The tongue had a thick, whitish coat. There were absolutely no symptoms referable to the chest.

The following morning at eleven o'clock I saw the patient at her home. The temperature was 101.4°. There were no rose spots, no abdominal tenderness nor gurgling. The spleen could not be felt. A careful physical examination of the chest showed nothing further than the signs of an apparent recovery from empyema, there being, as I have said, no symptoms referable to the chest. Seeing the case every day

soon convinced me that I was not dealing with a case of typhoid fever. The tongue continued coated, and the fever was more or less present, being, however, much higher in the afternoon.

On July 10th and 12th, at noon, the temperature was normal, but at 4 p. m., on the latter date, it registered 100.8°. By leaving my thermometer the temperature was taken twice daily, showing a normal temperature in the morning, and from 101.8° to 102.4° in the afternoon.

July 18th, diarrhoea appeared, which I would here remark lasted without intermission until November 25th, the number, but not the character, of the dejections being controlled by morphine.

July 20th, vomiting began, taking place every night about 9.30 o'clock. So regularly did this make its appearance, that the possibility of there being a malarial element in the case was quite seriously considered, and quinine administered at 9 and 2 o'clock in the day without effect.

July 24th. As the vomiting did not appear to abate, and as the surroundings were such that the patient could not receive the proper care, she was sent to the Boston City Hospital.

When the patient went out of my care no chest symptoms had been discovered by me. I had not, however, listened to her chest for several days. On referring to the records of the City Hospital, through the kindness of the visiting physician, Dr. Folson, I found that copious fine crepitant rales were heard in the right back, with occasional friction rubs, this being, please notice, on the side opposite to the one on which was the empyema.

August 20, was a note, saying that there was "some cough and expectoration the past few days." The patient was up and about most of the time, and went out doors in pleasant weather. The evening temperature kept up, and on August 25th she was discharged relieved, the final note being, "Condition in lungs about the same. General condition no better. Diagnosis, phthisis."

On August 28th, I examined her at home, and found no signs of moisture in the lungs, with the exception of a few fine rales in the region of the right nipple, the old empyema signs remaining the same as before. Her general appearance, however, was bad; her expectoration greenish and thick; weight 100 pounds; pulse 120; in fine, she did look phthisical. So, thinking that there probably were some signs, which did not show themselves to my stethoscope, I prescribed creasote, whiskey and Fellows' Hypophosphites, and sent her to Melrose Highlands, where she had friends.

She returned to Boston on September 14th, but I did not see her until the 16th. She had not improved during her absence, and had developed a new symptom, namely, continual pain and soreness in left back below angle of scapula, and also in right axillary region. The pain was sufficiently severe to keep her awake nights, she being unable to get into a comfortable position. The cough had also increased, in fact, she said she coughed almost all the time, raising a rather thin, greenish fluid, a pint being raised in about two hours the previous night. Much dyspnoea on the slightest exertion. Pulse 128, temperature 101.6°.

It was at this point that I blame myself for not having discovered the true condition of things. My only excuse is, that considering the case from all sides, I

had finally decided the case to be one of rapid phthisis, notwithstanding the negativeness of the physical signs. My physical examination at this time, though probably biased by the diagnosis at which I had arrived, was somewhat interesting. It was as follows: marked dulness at right infra-clavicular region, with numerous medium, moist rales. Cracked-pot resonance over this area, but no signs of cavity on auscultation. No metallic tinkling. No rales nor adventitious sounds heard elsewhere. The same treatment was continued with the addition of a Beverly-Robinson inhaler, creasote being used. The pain in left back disappeared in a couple of days, expectoration diminished, and in a week she was feeling quite a little better, so much so, that she decided to return to Melrose, which she did September 24th. I should have stated that at this time there was marked clubbing of the finger-nails, and also night sweats and diarrhoea.

I heard from her occasionally through her husband. On October 1st, he left word at the house, I being away at the time, that a swelling had appeared in the left side in front just below the nipple. About two weeks later he told me personally the same thing. Her condition generally remained about the same. Toward the latter part of October she was seen by a Melrose physician, who pronounced the swelling to be a surface abscess, and ordered a poultice. The following day he lanced the abscess, there being a profuse discharge of pus. Coincident with the opening of this abscess the cough stopped, and the patient's appetite, which had been poor, began to improve. In a short time the discharge began to be extremely foul, and although the patient's condition was very much improved, at the same time she was suffering from edema of the ankles and legs, night sweats and dyspnoea.

Three weeks after the opening of the abscess, November 17th, the patient again entered the St. Elizabeth's Hospital, at which time the following conditions were found: patient much emaciated, edema of ankles, diarrhoea. Examination of right lung was negative with the exception of a few sibilant rales in mammary region. Respiration absent over whole left front and back, with the exception of much diminished respiration in infra-clavicular region. The skin over an area the size of a silver dollar in left sixth interspace in mammary line was bluish in color, there being an opening in the centre of same about one-third of an inch in diameter. The opening was discharging a stinking, watery, purulent fluid.

November 19th, at 5 p. m., temperature 102.2; pulse 120.

November 20th, at 11.30 A. M., there being no albumen in the urine, the patient being etherized, the following operation was performed, Drs. Kingman and Conant assisting. An incision about three inches long was made through the centre of the before-mentioned discoloration parallel to the ribs. Upon inserting the little finger it passed directly into a depression in the sixth interspace in mammary line. Artery forceps were first pushed through the opening followed by an uterine dilator, and about a quart of pus evacuated.

The cavity was then washed with a solution of corrosive sublimate (1 to 3,000). The tissue over the seventh rib was then dissected down to the seventh interspace and an inch of the seventh rib removed with bone forceps. The cavity, which was deeper than the index finger, was curetted with a dull curette

and washed out again with a solution of corrosive sublimate (1 to 10,000). Fully a half-teacupful of masses of lymph was washed out of the cavity. A double drainage-tube was inserted and the side dressed as before. The patient did uninterrupted well. Coincident with the operation the diarrhea stopped, it having been present continually since the preceding July. November 23d, the edema of the ankles also disappeared.

Measurement of the cavity from time to time showed a gradual diminution in the capacity of the same as follows: November 24th, five ounces; November 30th, three and one-half ounces; December 4th, three ounces; December 9th, two and one-half ounces; December 14th, two ounces.

On December 16th the probe passed in five inches, the cavity holding one and one-quarter ounces. The weight was 110 pounds.

On December 23d the discharge was quite purulent. The temperature, however, remained normal, and the patient was up and around the ward, doing considerable sewing.

On January 12th, although the patient's general condition remained excellent, nevertheless, the discharge was apparently increasing. A probe at this time passed in four inches.

On January 15th, having decided that further operative interference was necessary to insure the complete healing of the opening, the patient was accordingly etherized by Dr. Ross, and the old incision of November reopened, Dr. Conant assisting. About one inch of the fifth and sixth ribs were resected, the direction of the opening being outward and upward toward the axilla. Examination by the finger showed a cavity extending upward and backward toward median line of body about four inches in length. A double drainage-tube was again inserted, and the side dressed the same as before. The following day the patient was very uncomfortable, she being very restless and aching all over. The temperature registered 103.4°.

On January 18th she was quite herself again, as far as her feelings were concerned. A considerable amount of pus came away in the washings, but the capacity of the cavity steadily diminished at the rate of about a drachm a day, so that on January 29th the cavity held but two drachms, the character of the discharge being much more serous.

On February 2d, the tubes were removed altogether and the cavity filled with a mixture of iodiform and vaseline, twenty-four grains to the ounce.

On February 9th, nothing but the line of the incision remained unhealed, and on the following day she was discharged well.

Up to the present time the patient's health has been excellent, there being no symptoms whatever of any return of the disease.

SNAKES IN INDIA.—Sir Joseph Fayrer, in a lecture recently delivered at the Victoria Institute on the venomous snakes of India, reports that upwards of 20,000 human beings and some 3,000 cattle are annually killed by these reptiles in that country. The Government of India is offering rewards for their destruction, as was shown by a return that 578,415 snakes were caught and killed at a cost of 19,004 rupees in the year 1890.

Clinical Department.

PLACENTA PRÆVIA AND URÆMIA IN THE SAME PATIENT.¹

BY CHARLES W. TOWNSEND, M.D.

Mrs. C., thirty-two years of age, was first seen by me late in the evening of December 19, 1891. She had been married one year, during the first four months of which she had aborted twice. At the time of my visit she was six and a half months pregnant, and had begun to have pains and flowing at four that afternoon. I found she had lost considerable blood, several napkins and a small blanket being more or less soaked; but I also observed her edematous face and extremities, which were very pale and bloodless.

On questioning the nurse, it was discovered that the edema had appeared in the last two days, that a severe headache began that same morning, and that her vision became blurred, the sight in the left eye being very defective. Nothing abnormal had been observed about the appearance or quantity of the urine. The os uteri was rigid, admitting only one finger. The placenta could not be felt, although from the amount of hemorrhage which still continued, I believed that the placenta was partially detached from a low position. There was not enough urine in the bladder to flow out through a catheter, but the small amount that was caught in the end of the catheter was found to be of a smoky color and loaded with albumen. Labor-pains were present, but slight and irregular.

In the presence of the ante-partum hemorrhage, it was decided to dilate and deliver, the existence of uremia and threatened eclampsia making this course more urgent. Dr. T. F. Sherman kindly saw the case with me, and agreed with me in the diagnosis and treatment.

After full anesthesia with ether, manual dilatation was begun at midnight, completed in an hour and three-quarters, with Dr. Sherman's help. The placenta was found partially detached close to the edge of the os on the left side, and there was considerable hemorrhage at the completion of the dilatation. A dead six-and-a-half-months fetus, was easily turned and delivered.

The patient was given one-sixth of a grain of pilocarpine and drachm of brandy subcutaneously, and was surrounded with hot-water bottles and warmly covered. She began to sweat freely in twenty minutes, and came out of the ether well.

She was rational and comfortable that morning six hours later, and free from headache although the vision remained blurred. Her pulse was 120, temperature 100°. Ten hours from the catheterization before labor, the water, only four drachms in all, was again drawn, and found to be smoky, containing over one per cent. of albumen, and a sediment of much fresh blood, and numerous epithelial, blood, hyaline and fatty casts of large and small diameters.

She was again made to perspire freely with pilocarpine, and was given cream-of-tarter water to drink, in addition to milk diet. The bowels were moved freely, four watery dejections being obtained by the use of Epsom salts.

The kidneys from that time began to act, and in the next twenty-four hours she passed two and one-half quarts of urine, containing but a trace of albumen.

¹ Read before the Obstetrical Society of Boston, March 12, 1892.

Two days later the urine had increased to four quarts in the twenty-four hours, the edema had disappeared, she had had no more headaches, and her convalescence was fully established. The albumen gradually diminished, and in five weeks after confinement none was to be found in the urine.

My excuse for reporting this case is the fact that two such grave obstetrical emergencies as uremia and placenta previa were met with in the same patient. It is reasonable to suppose that the free hemorrhage from the placenta previa prevented the onset, in this case, of eclampsia.

PLACENTA PRÆVIA COMPLICATED WITH URÆMIA AND IMPENDING ECLAMPSIA.¹

BY CHARLES M. GREEN, M.D.

THE following case was seen in consultation with Drs. Martin and Chandler of Medford: to Dr. Chandler I am indebted for the notes of the case.

The patient was an American woman, thirty-nine years old, in the tenth lunar month of her first pregnancy. She was first seen by Dr. Chandler for Dr. Martin April 24, 1891, when he found her suffering slight pains and flowing quite freely. Examination revealed a placenta previa, and the os uteri undilated. A vaginal tampon was introduced, and morphia given, after which pain and hemorrhage ceased. It was learned at this time that the patient had always had more or less stomach trouble, and that for five or six months it had been worse. For a month she had had a good deal of headache, and frequent attacks of nausea and vomiting. The urine was found to be scanty, of low specific gravity, and containing one-half per cent. of albumen and numerous casts: there was moderate edema of the feet and legs.

Next day the tampon was removed and a douche given: there was no more hemorrhage; but nausea was constant and vomiting frequent. It was obvious to Dr. Chandler that immediate obstetric interference was urgently indicated; but circumstances prevented, and Basham's mixture was prescribed. No improvement followed, and on April 28th and 29th not more than ten ounces of urine were passed in twenty-four hours. Pilocarpine one-sixth of a grain, repeated in half an hour, did not start perspiration.

April 30th, flowing began again and was controlled as before with tampon and morphia. May 1st I saw the patient in consultation, and found complete placenta previa, but no present hemorrhage: the os was slightly dilated. This condition was in itself an indication for immediate delivery: the grave symptoms of uremia and impending eclampsia made active interference doubly urgent. Ether was given, the os uteri was dilated manually, and a living child was delivered by internal podalic version: the infant, though asphyxiated, premature and poorly developed at birth, has thus far survived.

Next day, there was no more vomiting, and the patient was passing more urine. The following day, the patient passed a good amount of urine, took plenty of nourishment and suffered no nausea. One month after delivery, the urine was found free from albumen and casts.

Placenta prævia is a rare complication of pregnancy and labor, occurring perhaps once in a thousand cases:

it occurs six times as often in multigravidae as in those pregnant for the first time.

Eclampsia occurs about twice as often as placenta prævia and is most frequently seen in primigravidae, especially in elderly primigravidae. The combination in the same patient of these two most serious complications of pregnancy is of sufficient rarity to make all such cases worthy of record.

TRICHINOSIS: REPORT OF CASES.

BY C. W. MACDONALD, M.D., BOSTON.

FOR the past twenty years there is no authentic account of cases of trichina poisoning in Boston. For a longer period there have been no fatal cases of it. Its comparative infrequency yet fatal tendencies, are, I think, sufficient inducements to note well and publicly the insidious nature of the dread visitor. With this objective view I propose to report my experience lately with a few cases in my neighborhood.

About the last of March a patient came to my office complaining of some purging with abdominal pains. Having no other serious symptoms, I concluded that the trouble was caused by some indigestible irritant and prescribed accordingly. Two days later I was called to his boarding-house to see the proprietor, who was in bed and seriously ill. His symptoms were somewhat similar to those of patient No. 1, but much more exaggerated, and, in addition, he had a temperature of 102° F., bulging of eyes, headache, and "pains all over his body."

Being assured of no unusual diet in the household, and, consequently ignorant of the true nature of the disease, I treated the matter symptomatically and expectantly, and left with typhoidal thoughts agitating my mind. Next day my second patient's sufferings were intensified; temperature 104.5°. Still I postponed my diagnosis, and gave ten grains of quinine every three or four hours and all the brandy the patient could take. Next morning my anxiety was considerably removed by finding my patient with a temperature of 102°, and his other symptoms very much ameliorated.

And now, with the invasion of other members and friends of the family, to the number of fifteen, came the solution of what thus far had proved a mystery. About ten days previously, the family larder had been reinforced by the addition of a partially smoked ham. A neighboring family was also similarly supplied, and sandwiches, of the raw pork from both hams, had been more or less freely partaken of. Every one who had eaten of them, was, in about forty-eight hours, similarly affected. Some more seriously than others, the degree of affliction not at all in proportion to the quantity eaten. One visitor at my patient's house, who had eaten two sandwiches, died in about ten days, despite the best medical attendance.

Now, to return to my patient No. 2, whom we left with a temperature of 102°, upon quinine and brandy. He made an uninterrupted recovery. His was the most severe and the most typical form of trichine infection of all my cases. At the present writing, though past the seventh week, the usual time of active trichine symptoms, all the affected are still troubled with some diarrhea and muscular pains, but they have resumed their respective avocations, and get on toler-

¹ Read before the Obstetrical Society of Boston, March 12, 1892.

ably well with liberal libations of brandy and occasional doses of quinine.

In connection with this report, I may add, that the microscopic examination of the infected pork revealed numerous and active swarms of trichinae.

Trichinosis, fortunately a rare disease, occupies but a small space in medical literature. Whilst the parasites are generating in the intestinal tract, some measure of treatment with the hope of either their elimination or annihilation is offered, but its efficiency, in either case, remains an open question. When the trichina reaches its coveted home in the muscular tissue within its encysted walls, it, thus far, bids defiance to any adversary that may pursue. That quinine and alcoholic stimulants in large quantities, should, apparently at least, arrest a serious case of trichinosis, in one instance, does not establish a principle, but the coincidence, to my mind, is too striking to be forgotten. Besides their stimulating effects, may they not have some specific properties?

In a recapitulation of the subject, the following facts may be gleaned:

- (1) Necessity of thorough cooking of pork before eating.
- (2) Necessity of a true history in disorders simulating typhoid fever or diarrhoeal troubles.
- (3) Speedy microscopic examinations of suspected pork.
- (4) Tonics and alcoholic stimulants.
- (5) Imprudence of a sudden or premature arrest of alvine evacuations.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

TREATMENT OF CROUPOUS PNEUMONIA IN CHILDREN.¹

The generally accepted opinion as to the element of danger in pneumonia is the tendency to cardiac exhaustion or heart-failure. In order to guard against this danger, it is of the highest importance to understand how such a condition is brought about. An excellent paper by Dr. A. H. Smith called attention to the important part played by the engorged condition of the diseased lung in producing cardiac exhaustion. It was shown that the right heart and not the heart as a whole was the main source of exhaustion, and that it was far safer to watch the pulmonary second sound of the heart than the pulse, as a danger signal of this condition. In Dr. Dessen's paper, from which this is taken, we have an inquiry based upon this hint. Owing to the obstructed circulation in the engorged lung, the blood-vessels of which are in a state of permanent dilatation, the right heart becomes overcrowded. In the systemic circulation the arterioles are contracted. The left heart has therefore to work more powerfully which forces more blood into the venous circulation, but the right heart, owing to the obstruction in the lungs cannot readily empty itself before it is filled by the return flow from the veins. Dilatation of the right ventricle follows.

If such a condition is the probable interpretation of the tendency to heart-failure in croupous pneumonia, the treatment, so far as the circulation goes, should

attempt to relieve the right heart by increasing the capacity of the systemic system and lessen the rapidity of the heart's action.

Since croupous pneumonia, especially in children, tends to recovery, our efforts should be directed to assisting nature. As a means of dilating the superficial blood-vessels and producing diaphoresis simple remedies such as the spirits of mindererus, or the solution of acetate of ammonium, or sweet spirits of nitre are serviceable. Sponging the entire body with water at 116° F., or the warm bath at 95° F., is also recommended. This sponging and bath are given for the purpose of dilating the cutaneous vessels and inducing diaphoresis and should be so conducted as to accomplish these ends, and with them the use of friction to the skin may be advantageously employed. It has been observed that hot sponging reduces temperature better than the ordinary antipyretics. To give the venous circulation still more relief the blood from it may also be diverted to the liver, a reservoir capable of holding a large amount of this fluid. Furthermore the increase in the blood supply to the liver will stimulate its functions, among which is to be noted the destruction of poisonous products in the blood, and this is suggested as a point of much practical importance. To bring about this flow of blood to the liver small doses of calomel in triturates of one-tenth of a grain each are given every hour for six doses, on the first day and thereafter every three or four hours daily, according to its effect upon the bowels. The diuretic action of small doses of calomel should not be lost sight of as the kidneys are important organs for the elimination of fever products.

Aconite is mentioned as a remedy which may be used to reduce the heart's action. This is administered in half a drop or drop doses at the onset of the disease, and repeated hourly while the patient is awake, this not only slows the heart's action, but it assists in dilating the cutaneous vessels and promoting respiration.

Large doses of digitalis are mentioned, and condemned. Carbonate of ammonia seems to him useful only as prompt diffusible stimulant to the circulation as a whole at the period of crisis.

A warm poultice aids diaphoresis by means of warmth and moisture, but the employment of a warm wet binder serves the same purpose as the poultice, is neater and less disturbing to the patient. The above are some of the views outlined by Dessen while following out the lines of rational therapeutics. He believes that in order to treat croupous pneumonia in the best way one should keep the principle of continuous dilatation of the cutaneous blood-vessels always in mind. In this way relieving the right heart, reducing the temperature while producing diaphoresis. If there is a morbid poison it is thought that its elimination through the skin and kidneys may be promoted and its destruction in the liver aided.

THERAPEUTIC USE OF THE SALTS OF STRONTIUM.

As the salts of strontium have been found to be diuretic when given to dogs, it was expected that they would behave in the same manner in man. On testing them, however, Professor See found that diuresis could not be produced by their means even in cases in which it was easily set up in other ways. It was noticed, however, that in patients with Bright's disease, or heart affections, the digestive troubles, underwent

¹ Archives of Pediatrics, 1891, No. 93.

a very marked improvement. This led the author to try the effect of bromide of strontium in gastric affections.

Thirty-two patients, mostly suffering from acid dyspepsia, either with or without dilatation of the stomach, were thus treated, the minimum daily dose being thirty grains, and the maximum a drachm, taken between meals. All showed marked improvement, the diminution of gas formation was very noteworthy. In eight other cases of dyspepsia from reduced hydrochloric acid formation, the drug produced equally satisfactory results, completely controlling fermentative changes and the formation of lactic and acetic acids.

Dujardin-Beaumetz makes the following statements as to the clinical uses of the salts of strontium. The only salt of which he had had any experience was the lactate. This he had employed in a number of cases of Bright's disease, with albuminuria; under its influence he had the satisfaction of seeing the albumen diminish very considerably, in some cases being reduced to one-half of that previously excreted. He attributed this favorable action rather to the very beneficial action of the strontium salts on digestion than to their direct action on the kidneys. At the same time he pointed out that the greater or less quantity of albumen passed was of less importance in the prognosis of the disease than the proportion of toxines retained in the organism, which the renal filter either retains or allows to pass into the urine. He recommended that a milk and vegetable diet be employed in combination with the drug, which he gave in doses of one and a half drachms per diem.

THE USES OF STRONTIUM BROMIDE.

In experimental doses of salts of strontium bromide, in thirty-two cases of dyspepsia, he gave from thirty to forty-five grains a day, in three doses, with meals; and those cases in which there was excess of hydrochloric acid rapidly improved and developed much less gaseous products. In six other cases, where there was vomiting with deficiency of acid, there was complete cessation of the sickness. Strontium lactate did not produce any good effect, strontium bromide, as well as calcium bromide, was found of use by M. Sée in epilepsy; and this was confirmed by M. Férc, who found, in fact, that owing to its easy agreement with the stomach, it was sometimes advisable to give strontium bromide in preference to the potassium salt.²

NAPHTHALIN IN WHOOPING-COUGH.

Ivanoff, referring to Chavernais's paper, says he has treated all his cases of pertussis by naphthalin for several years past, the result being invariably excellent. It is absolutely necessary, however, that the patient should inhale the naphthalin fumes continuously day and night till recovery takes place. It is sufficient to fasten a small linen bag containing the drug on the child's neck, or to rub the substance into the patient's clothes. It is also advisable to sprinkle the powder freely all over the floor of the sick-room. The paroxysms of coughing very quickly subside, and soon disappear altogether. In very severe cases the author sometimes resorts to the internal use of bromide of sodium or potassium as an adjuvant.

(To be continued.)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

REGULAR meeting, Monday, March 7, 1892. DR. S. G. WEBER in the chair.

DR. J. B. AYER read a paper on

THE THIRD YEAR OF THE INFLUENZA EPIDEMIC.³

DR. H. W. WILLIAMS: I had a personal experience of influenza last year; having an attack come on in the very sudden way described. I was at the hospital and did my morning work, seeing a large number of cases within a comparatively limited time; but I felt, contrary to my usual habit, tired after finishing my work, and it seemed to me afterwards that I said something a little irrelevant to one or two of the students who asked me some question relating to the cases. I managed to get home very well, but went immediately to bed and was unconscious for a week. Fortunately I had no severe pains in the head, but was absolutely unconscious. Then I had a little complication; a portion of one lung being affected with pneumonia at the lower part, and yet I had no suffering of consequence at any time during the duration of the disease. I took enormous quantities of milk, and almost from the beginning of the time when consciousness returned I was able to take solid food, eating my rations almost as if at the dinner table, but it was a number of weeks before I was able to do much work. I felt wretched in every way, but had nothing to complain of in the way of severe cardiac or other symptoms. For a considerable time I was less inclined to exertion, but was able to do nearly everything I wished to, intellectually, after I had recovered consciousness. On the whole I feel that I had a very fortunate experience; though a particularly unpleasant one to me accustomed as I have always been to very active work. I had a little return of influenza at the beginning of this winter, and for three or four days was in bed a part of the time, but I have had no other trouble from it. I think the doctor has given an admirable sketch of the course of the epidemic as I have had occasion to observe it.

DR. C. J. BLAKE: There have been more publications on the other side of the water than in this country upon disease of the ear in connection with the influenza epidemic. In all that has been written there is one point noted which illustrates the remark of Dr. Ayer in reference to the effect on the nervous system. A vasomotor inhibition showing itself by very considerable congestion in the middle ear, and in the cases of serous exudation a greater predominance of hemorrhagic effusion, not perhaps distinctly to the extent of being sanguinolent, but with a sufficient number of blood corpuscles to make the discharge very markedly yellow.

DR. J. STEDMAN: I was unfortunate in not being in early enough to hear the paper. I have been much interested in the epidemic this year. It seems to me that in many cases it is more likely to prove of long standing than the epidemic of two years ago, and in Ward 23 the tendency was to the pulmonary organs, especially pneumonia, although a large number of cases of bronchitis without pneumonia were observed.

² British Medical Journal, January 9, 1892; Practitioner, February 1892.

³ See page 513 of the Journal.

I noticed that the convalescence was tedious and the nervous system very much reduced, that strong men who were taken down had a good deal of nervous disturbance, headache, and great prostration. I found that keeping them strictly in bed, economizing their strength, feeding them well and in many cases the use of stimulants seemed to be the best plan to subdue the influenza attack. I noticed several cases similar to those Dr. Blake has spoken of, and in some the ear trouble was severe. I think bronchitis, pneumonia and ear troubles so far as I have observed, were more marked than in the other epidemics we have had.

DR. SPEAR: Dr. Blake would leave the impression, upon the medical practitioner, that during the influenza the ear is not very seriously affected, when on the contrary the ear is often very seriously inflamed, and the hemorrhagic conditions which he mentions are exceedingly common rather than otherwise. The vasoconstrictor irritation or lack of inhibition as he described it, is quite marked. It has been my privilege to see a large number of cases on account of my term of service at the Eye and Ear Infirmary giving me the winter months, and I can recall and contrast the two epidemics. In the first we had a very large number of acute inflammations and this year as well, and in nearly all of them we were surprised at the large amount of blood which formed in a coagulum as a sort of cast of the canal. The treatment did not differ very much from that of the acute inflammations which we ordinarily see. I had no difficulty whatever during the first month, that is through January, because the cases came early, but later during the second month the patients who had been treated by other gentlemen or who had neglected treatment or had been improperly treated by others, presented mastoid cases, that is to say, complications of acute inflammations such as mastoid inflammation and meningeal inflammations and the severer forms which always come from neglected acute inflammations of the ear. I should like to ask Dr. Ayer if he can tell me what the pathognomonic sign of an acute attack of influenza is. From my slight experience I think I have noticed that the first appearances present that condition which Dr. Blake alluded to, that is vasoconstrictor paralysis, and one finds a flushed face, high temperature, bounding pulse. The last article that I read, which has been copied by the public press, was an account by the Austrian specialist, Nothnagel, who described the disease as a neurotic one, that is to say, as a nervous disease. I think we may add that it is a disease of the sympathetic nervous system, which is that portion of the general nervous system which I sometimes explain as that which remains awake during sleep. There are two systems of nerves, cerebro-spinal and sympathetic; the sympathetic governs all the functions of the body not under control of the will and is held in abeyance by the cerebro-spinal system. In this disease the sympathetic system gets the upper hand, as it does in certain ear cases, and the result is that the weakest portion of the economy, be it throat, ear, lung, or abdominal organ, shows in its later pathological condition the effect of that want of inhibition, and we get, as the gentleman has described very carefully, the pharyngitis or laryngitis, the pneumonitis or enteritis, etc., and all these diseases capable of producing their various phenomena in proportion to the amount of disturbance and to the amount of treatment. I notice with pleasure that my observations agreed with those

of Nothnagel, who also claims that stimulation at the time when we have been taught that stimulants should not be given, is the proper thing.

DR. HODGES: I should like to mention a curious coincidence in regard to the influenza at Nahant. Three years ago, when it first came there, it affected at first the people living in the houses on the southwest side, on Boston Bay, and from there it spread slowly into the upper part of the village. This year there were a large number of people affected with the influenza there, and it came in the same way. So far as I have been able to inform myself, in that part of the town known as Short Beach Village, a community of seventy-five or a hundred people, none of the people have had influenza this year, while, three years ago they were more or less universally affected with the disease.

DR. MUNRO: There is a point about the temperature I have noticed in uncomplicated cases of influenza which I have not observed in other diseases. In the morning it is lowest, begins to rise about noon and reaches its height at six; but by nine or ten o'clock in the evening it has fallen considerably.

DR. J. B. AYER: I have no doubt that the sympathetic system is principally to blame, but I must confess that there is much which I do not understand. While last year it would seem that that would be a proper explanation, I do not understand why there should be so many catarrhal cases now.

DR. S. H. AYER reported

A CASE OF EMPYEMA, WITH RECURRENCE AFTER APPARENT RECOVERY.²

DR. INGALS: I think the patient, as well as the reporter, deserves a very high degree of credit for mutually sticking together through such a series of disasters and troubles. I think the report is admirably made, and I think the reader deserves great credit for his perseverance, his care and his skill.

DR. F. L. JACK read a paper on

OPERATIVE TREATMENT FOR THE RELIEF OF CHRONIC SUPPURATIVE AFFECTIONS OF THE MIDDLE EAR, WITH REPORT OF THREE CASES.³

DR. BLAKE: I have listened to Dr. Jack's paper with much interest, and would like to ask one question, that is as to his observation in regard to the effect on the chorda tympani in the removal of the malleus and incus.

DR. JACK: There is some loss of the sensation of taste on the side of the tongue corresponding to the ear operated upon. This is said to disappear in a few days.

DR. BLAKE: I think the removal of carious ossicles comes under the head of a simple, justifiable surgical procedure, and am quite in accord with the remark which the reader makes also with reference to preliminary treatment, having in view the cleansing of the suppurating cavity in the upper portion of the tympanum by the use of the middle ear syringe; the presence of horizontal reduplications of mucous membrane often presents a decided obstacle to the passage of the pus which may be formed above them, downward into the lower portion of the tympanic cavity and so outward, and it is sometimes found that the use of the middle ear syringe can be much favored by a thorough

² See page 547 of the Journal.

³ See page 545 of the Journal.

division of these folds from before backwards. Given careful and painstaking attempts to stop a suppurative process in the upper portion of the tympanic cavity without resort to operation and given caries of the malleus and incus, removal of these bones, as the writer has said, comes distinctly in the line of simple surgical procedure and as such is to be carried out with the precautions which he mentions.

In confirmation of Dr. Jack's remark as to persistence of the hearing in cases of loss or removal of the membrana tympani, malleus, incus and stapes, I may mention one case in which there has been destruction of the membrana tympani, sloughing away of the malleus, incus and greater part of the stapes, with a fair amount of hearing remaining under these conditions.

DR. J. O. GREEN: The paper is a very interesting one. I think the removal of carious bone is indicated and experience proves that it can be done perfectly well here. I am very glad to see the principles of general surgery being applied to these minute parts as they can and should undoubtedly be and the whole principle of the treatment of otorrhoea I would bring under general surgical treatment applied to the minute anatomy of the parts and with the adaptation of special instruments to get at those parts.

In regard to the occurrence of caries here, I think the later German observations show that the anvil is more inclined to caries than the hammer. I think recent observations in the *Archiv für Ohrenheilkunde* from Schwartz's clinic show that the incus is 40% oftener involved than the malleus, and therefore I think in the removal of these bones that it is better to include the removal of the incus with the hammer. If you remove the hammer the incus is of no possible use, and as the pathological investigations of the last few years have shown that the incus is more likely to be diseased than the hammer, therefore, I think we had better take out both when we take out either. I have had two cases this winter which are in confirmation of this. In one case there was no incus remaining. In the second case I brought away the merest little shell about twice the size of a large pin-head, so thin it crumbled in wiping it off the hook with which I brought it out. The hammer in this case was largely diseased, but still there was a large part of it remaining.

In regard to the rapidity with which caries occurs in these cases, I have had a case this winter which interested me because I was able to determine this point. I had a case of scarlatinal diphtheria, or, as it is sometimes called scarlet fever and diphtheria, with total loss of the drum membrane. I did not see the case until the drum membrane was destroyed. In syringing a week or two afterwards the incus and hammer came away. Both showed the beginning of caries which is an interesting fact showing how rapidly caries may attack these bones. It could not have been more than four weeks in this case.

In regard to removing the incus I cannot think that the forceps will succeed in the majority of cases. I have experimented some on the cadaver and have done the operation a number of times, and the only instrument I find to work satisfactorily is the little incus hook invented by Ludewig. The incus in the majority of cases lies so high up that I do not think it is possible to get at it satisfactorily with a pair of forceps. The bones are firmly attached, and this little hook can be passed far up into the cavity.

The question of hearing is an interesting one. You

find these cases of caries of the ossicles with very good hearing. You find the drum membrane entire except in the membrana flaccida with ossicles carious and the hearing very good indeed. I have had two of these cases where it was quite a question in my mind what to do, for if I took out the drum membrane I was sure to injure the hearing. In both of these cases I found it was necessary and was glad I did it. In one of the cases I did and in the other I did not remove the whole of the drum membrane. In the future I should take out almost the whole of the drum membrane I think. You often have with these cases caries of the walls of the tympanic cavity. In one of these cases I had but a small opening into the tympanic attic and the drum membrane healed before I got rid of caries of the attic wall. In the next case I took out nearly the whole of the drum membrane with greater success, so that in the future with my present knowledge I should take out almost the whole drum membrane in order to make sure I did not get too rapid healing. Having taken the hammer and incus a cicatricial membrane over the whole drum membrane would be as good as a cicatrix up in the little angle where you take out only a small piece and if you have caries of the walls you have a large opening that will keep open a long time and you are able to treat that caries until it has got well.

In regard to prognosis we must be careful not to make it too favorable, for in quite a proportion of cases we do find caries of the walls of the attic which will keep up the otorrhoea afterwards. Although I believe in the operation thoroughly, and although I think its future will be more useful than now, yet we must bear that in mind and be guarded in the prognosis. You are not sure when you begin on the case that you are not going to find caries of the tympanic walls.

In regard to relapses I think we must be a little careful also about promises, because in a certain proportion of these cases, according to the modern theory which is probably the correct one, there are in the irregularities of the bone, spots in which the microbes lie at rest for a considerable time when they will, from some cause we do not understand, again resume their growth and activity, and set up a fresh attack of inflammation. In spite of these possibilities, in the majorities of cases I am satisfied the operation is an extremely useful one, and occasionally saves life.

DR. BLAKE: The incus often slips upward out of the way and is in such position as to be difficult to get hold of. I have generally used for the removal of both the malleus and incus a snare with stout wire. After removal of the malleus and incus or where disarticulation of the incus from the stapes has been effected I have in several instances added to the operation a step found useful in cases of non-suppurative inflammation of the middle ear, namely, division of the tendon of the stapedius with reference to further freeing the stapes.

DR. SPEAR: I have been pleased by listening to Dr. Jack's paper though he has mixed his cases so that unless they are disentangled the impression will be given that all cases of loose ossicula would come under the head of removal of the ossicles. He reports three cases of removal of the ossicles in cases of chronic suppuration of the middle ear for the cure of the chronic suppuration. The second case is one of simple exfoliation of the malleus which he fails to

trace to a conclusion and which I happen to know about as the result of the case is still very much in doubt. I have had the case under treatment for the last two months. The patient still has a large amount of granulations in the canal, a profuse discharge of pus, and has no hearing. It was a clear case of exfoliation of the malleus.

I have here the *American Journal of Otology*, in which there is a review of Wolf:

"Exfoliation of The Necrosed Bones of The Ear." Os-car Wolf: *Archives of Otology*, September, 1881.

The author of this paper finds that the cause of exfoliation of these bones in most cases is due to the so-called exudative necrosis in scariatinum diphtheria. The exudation is propagated from the pharynx through the tubes.

This diphtheritic process is not the only cause, for in twenty-eight cases analyzed by Wolf we find, scariatinum, eighteen; seroflu, two; typhus, two; measles, one; parotitis, one; diphtheritis, one; acute tuberculous, one; while in four there could be discovered no constitutional affection.

Exfoliation of the small bones rarely occurs without some constitutional disease. The incus alone was exfoliated six times in twenty-eight cases, while the malleus alone in two cases. The malleus is nourished not only by the vessels of the tympanum through the tympanic artery, but also from the external meatus."

I think the reading of this will emphasize what I have remarked that it is not an uncommon thing to find exfoliation of the ossicula. It is, however, very unusual for a carious bone to continue in the ear and the healing process go on, so that Dr. Jack and the other gentlemen who have done this operation are certainly correct.

DR. JACK: There is certainly no doubt that one or more of the ossicles are at times exfoliated in cases of long existing otorrhoea, especially in children. Usually, however, by the time this occurs caries of other parts of the ear is well on its way. Consider for a moment what desperate chances are taken all the time a long standing suppurating middle ear continues discharging. We have a septic cavity surrounded by bone which is in close relation to very important parts; any portion of which is very liable to become carious at any time, and there is no telling whether the process will stop short of serious mastoid trouble or abscess of the brain. Again there is possibility of absorption of septic matter to say nothing of the gradual loss of hearing. In fact carious bone in the middle ear can do no end of mischief. If the diseased portion can be safely removed why not remove it? Is it not quite as important to get rid of as possibly any diseased bone in the body?

I think the hook spoken of by Dr. Green would be useful in bringing the incus down into view in cases where the long process could not be reached with forceps. The bone is, I believe, generally so loosely held in its place as to offer little resistance to its removal.

DR. SPEAR: I do not wish to be understood as not advocating the operation. I agree that the carious malleus or incus, or both, should be removed under all circumstances in which the purulent process has been going on some time, but the report of the second case shows that Dr. Jack took hold of the polypus with the snare, and the malleus, which was loosely attached came out with it, while the contrast between the two cases is very marked. He leaves no record of improvement in hearing and I know there has been none,

and not only that, but the polypus and the granulations returned and still remain in spite of the operation. I think it would have been a much stronger paper had that second case been left out.

DR. JACK: We are told to report apparent failures as well as successes. Inasmuch as the patient neglected to continue under observation after the operation, the case shows nothing for or against the operation. Still I feel sure the ear was in a better condition to effect a cure after, than before, the operation.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING, March 12, 1892.

DR. E. H. BRADFORD reported, by invitation,

A CASE OF HYSTERECTOMY IN A CHILD,

of which the following is an abstract. The patient was a child who had enjoyed excellent health, until within the last six months.

A tumor was discovered in the lower portion of the abdomen, and this grew rapidly in the three months previous to the time when the child entered the hospital. There were no digestive disturbances or symptoms of pain or fatigue. But as there had been a rapid increase in the size of the tumor, an operation was thought advisable. On palpation, a large mass could be felt in the lower portion of the abdomen, a short distance — an inch and a half — below the umbilicus, and filling the lower portion of the abdominal cavity. The tumor was movable and irregular in shape. It appeared to be attached, in the middle line, to the lower part of the pelvis. An abdominal incision was made, and a firm, resistant tumor was found, occupying the middle line of the body, and without adhesions to the intestine or to the abdominal wall, except at the base. In order to remove the tumor, it was found necessary to free the attachments of both broad ligaments and to enlarge the incision above the umbilicus and to take the mass of the tumor out of the abdominal cavity. The tumor was friable, and some bleeding occurred from the unavoidable tearing of the external surface. This was controlled by the application of a rubber-tube around the base of the tumor. Hysterectomy pins were inserted at the base, and the *ecruseur* applied. The tumor was pressed upward by pressure in the vagina as well as by pulling it upward by means of hooks, and in this way it was possible to place the wire of the *ecruseur* around the neck of the uterus below the mass of growth. The tumor was then cut off above the point of insertion of the needles, and the stump seared by the Paquelin cautery. The abdominal incision was sewed up, with the stump outside of the abdominal cavity. The patient suffered from some shock. The pulse was rapid and remained rapid for nearly a week. There was no elevation of temperature beyond the two days following the operation. The case progressed rapidly and uninterruptedly to recovery. The slough came away after a fortnight, and the wound healed entirely at the end of two months. The patient was discharged from the hospital six months after entrance. There is no evidence of recurrence at present.

On microscopic examination, the tumor was found to be a growth of the ovary, which had invaded and surrounded the substance of the uterus so completely as to form one mass, it being impossible to distinguish

without microscopical examination where the abnormal tissue ended and the normal uterine tissue began. On careful examination, it was found that the whole of the growth had been removed, and that the base consisted of normal uterine tissue. The rapid cellular development had prevented any cystic formation in the growth, so that the tumor was entirely solid. It is too early to form an opinion as to probability of recurrence.

DR. F. H. DAVENPORT referred to the precocious development of the mammae and of the pubic hairs sometimes seen in these cases of pathological processes in the genital apparatus of girls.

DR. E. H. BRADFORD said that he had expected to find a sarcoma in this case, that being the commonest form of rapidly growing tumor in children. As to the frequency of disease of the ovaries in children, Spencer Wells has recorded only three ovariotomies in children out of a thousand cases.

DR. C. M. GREEN reported

A CASE OF PLACENTA PRÆVIA COMPLICATED WITH UREMIA AND IMPENDING ECLAMPSIA.¹

DR. C. W. TOWNSEND reported

PLACENTA PRÆVIA AND UREMIA IN THE SAME PATIENT.²

DR. A. WORCESTER asked, in view of the embarrassment of the kidneys, why not use chloroform and avoid the irritation from ether.

DR. C. M. GREEN replied that, notwithstanding the theoretical objection to ether in these cases, he had always used it, and had never seen any apparent ill results.

DR. A. WORCESTER said that at the Johns Hopkins Hospital it was considered almost criminal to give ether to a patient having any embarrassment of the kidneys.

DR. G. HAVEN had seen a case of eclampsia where chloroform was used and where the patient was very blue apparently owing to the chloroform.

DR. A. WORCESTER had gone from ether to chloroform simply from theoretical reasons and from published reports, but he had had good results with both of these anaesthetics.

DR. W. L. RICHARDSON had always used ether and with good results. As regards hemorrhage after delivery in cases of eclampsia, he had often noticed that this was more than in non-eclamptic cases, even where ether had been used to the same extent. He believed that it was a fortunate provision and one that tended to stop the eclampsia.

DRS. GREEN, C. E. STEDMAN and SINCLAIR believed that the post-partum hemorrhage was greater in these cases.

DRS. J. G. BLAKE and TOWNSEND thought that there was naturally no more tendency to hemorrhage after delivery in eclampsia than after ordinary delivery where the same amount of ether was used, but that we were less ready to check it at the start believing in its salutary effect on the convulsions.

DR. MINOT said that about nineteen years ago he was called to a woman, twenty-four years old, who had labor-pains for several hours. For some days she had complained of a sense of fullness in the head, but without headache, had epistaxis once in the night, and noticed that her ankles were swollen. At 4 a.m.,

spontaneous rupture of the membranes took place. The os was then hardly dilated, but soft. The presentation was normal. The pains continued through the day, the os slowly dilating. Towards evening the pulse began to rise, and at 7 p.m., was at 120. The os being at that time sufficiently dilated the forceps were applied, and delivery was easily effected. The child, male, was, and is still, living. About a pint of blood was discharged at the birth. The urine, by catheter was very "smoky." The pulse continued rapid, but there was no other unfavorable symptom until 9 p.m., when a convulsion, with frothing at the mouth, took place, lasting fifteen minutes. Ether was given by inhalation, and after an hour of heavy sleep consciousness returned. At midnight another convolution occurred. A pint of blood was then taken from the arm, and a quarter of a grain of sulphate of morphia was injected under the skin. Consciousness again returned, but at 3 a.m., of the next day, there was a third and last convolution, less violent and shorter than the others. The patient did well, although for some hours she was in a confused state of mind. Twenty-four hours after delivery twelve ounces of urine, the secretion of twenty-one hours, were drawn by catheter. It was less dark than before, and was moderately albuminous, and it contained a few transparent casts, with an abundance of rhombic uric acid crystals. The patient was freely purged by jalap and cream of tartar, followed by castor oil, and the urine became normal in a few days.

The plethoric condition of the patient, the epistaxis, and the sensation of pressure in the head seemed to indicate blood-letting in the case, and while it could not, of course, be assumed that life was saved by this procedure, it is certain that no harm followed it.

DR. R. L. HODGDON said that he always used chloroform in eclampsia, but he had never dared to do a prolonged operation without the use of ether.

DR. B. E. COTTING referred to several cases of eclampsia where he obtained favorable results by bleeding.

DR. J. G. BLAKE could recall no case out of a very large number where bad results ensued on the use of ether. In a woman now living he had given some twenty years ago ether more or less continuously for thirty hours for post-partum convulsions.

DR. W. L. RICHARDSON said that the mortality from eclampsia has very markedly diminished since we have early emptied the uterus. Twenty years ago the mortality was stated to be 83 per cent.

DR. C. M. GREEN said that Lusk in his edition of six years ago, puts the mortality from eclampsia at 23 per cent., but in careful hands it is undoubtedly much less. He can recall but very few fatal cases at the hospital. Nevertheless, some cases will die even with the best care, and even if they are delivered at once. A great deal depends on the care subsequent to delivery. He remembers one case where the patient was nearly drowned in her saliva, the pilocarpine having no effect on the skin.

DR. E. J. FOSTER referred to two cases of labor where there was prolonged etherization and much post-partum hemorrhage.

DR. W. L. RICHARDSON, DR. A. WORCESTER, and DR. A. D. SINCLAIR had not the slightest doubt but that ether favored post-partum hemorrhage.

DR. C. M. GREEN said that ether in any amount predisposed to post-partum hemorrhage, although he would

¹ See page 551 of the Journal.

² See page 550 of the Journal.

never hesitate to give plenty of it for operative purposes. The improper use of ether and the one which especially favored hemorrhage was the use of it in large quantities in the first stage. Another frequent cause of post-partum hemorrhage was, he believed, the expression of the placenta in too much of a hurry, before the uterus had time to retract. He would set no time-limit for the third stage, but would not attempt to express the placenta until the uterus had firmly contracted several times, and a proper amount of retraction had taken place. Immediate Credé without reference to the state of the uterus was a frequent cause of post-partum hemorrhage.

DR. W. L. RICHARDSON said that he had always taught that there was a third stage of labor. It was therefore absurd to try to expel the placenta until the uterus had begun to contract, or to use Credé's method except when the uterus was hard. He recalled one case of placenta praevia at the hospital where after the delivery of a living child by version he had thoughtlessly put in his hand and peeled off the placenta before the uterus had begun to contract. A severe hemorrhage took place at once from the open sinuses in the lower uterine segment.

DR. A. WORCESTER said that he had had much fewer cases of post-partum hemorrhage since he had adopted this principle in the management of the third stage.

DR. S. L. ABBOT referred to a case in the days when ether was first used in confinement, where two pounds of ether were given during a labor of 56 hours. The child was finally delivered with forceps after waiting, as was the practice then, perhaps 24 hours longer than we should wait now. It was still born as might be expected.

DR. RICHARDSON said that ether given in this way would indefinitely prolong and stop labor.

DR. HODGDON said that 10 years ago he had given ether in the first stage so that it indefinitely prolonged the labor, but he had not used it so since then.

DR. A. WORCESTER said that he considered ether much inferior to chloroform in quickly relieving the pains of labor, although for obstetric operations he uses ether.

He has for some time used with great success a mixture of bromide of ethyl 1 part, chloroform 3 parts, alcohol 4 parts. Three or four drops are put on a handkerchief and very speedily give relief from pain, although they do not stop the labor, and the patient does not lose consciousness but knows what is going on and is able to obey orders.

The advantages over chloroform are that this mixture is quicker and safer. It is safer because the bromide of ethyl tends to produce hyperemia of the brain which neutralizes the ischaemia produced by chloroform.

DR. C. W. TOWNSEND reported briefly

THREE CASES OF OBSTETRICAL INTEREST

which he had seen in the out-patient department of the Lying-in Hospital during the week.

The first case was one of twins, where the first child presented by the feet, sitting cross-legged as it were, in such a way as to prevent delivery. There had been no progress for some time. The pulling down of the leg that was caught gave immediate relief to the mother and was followed by the speedy delivery of a living child. After the delivery of this child the mother's

abdomen measured 52 inches in circumference, she being extremely obese. On rupturing the second sac the second child presented O. D. P. extended. Finding that it was impossible to flex the head manually, and that the position was rapidly becoming a brow, ether was given and Dr. Townsend on introducing his hand found that both hands of the child were folded below the chin, in such a way as to prevent flexion. On pushing these out of the way, the head was easily flexed, rotated manually to O. D. A., forceps applied at the brim and living child, number two, at once delivered. The children weighed six and one-half and seven and one-half pounds respectively.

The second case was of interest from the fact that the patient then in labor with her seventh child, gave the history of instrumental delivery each time. She had then been in the second stage for three hours. The child presented at the superior strait O. L. A., good flexion. The pelvis was slightly contracted in all its dimensions, the true conjugate measuring three and three-fourths inches. Delivery was easily accomplished with the Vienna forceps.

Case number three was of interest in showing the use of encouragement and the evils of discouragement. The externe having just had charge of the case of contracted pelvis, jumped to the conclusion that case number three also suffered from the same trouble, as her labor was a long one owing to poor pains, and had expressed the opinion that instruments would be necessary. After a period of several hours of no progress, Dr. Townsend succeeded in bringing about delivery within ten minutes of his arrival at the case, simply by encouragement. This has been well called by Dr. Richardson, the use of mental forceps.

ADDENDUM.

At the reading of the records of the Society at the next meeting, DR. B. E. COTTING said that he could not let the matter of the use of chloroform as advocated by Dr. Worcester go without protest. Chloroform has caused death and that too, whether diluted or not. The series of letters published in the *Boston Medical and Surgical Journal* some fifteen or twenty years ago, under the name of "Inominatus," were all by the same person, all protesting against the use of chloroform, and he was glad to see that the English medical journals had of late years come around to the same way of thinking. The same one who had protested then, would still protest now.

DR. S. L. ABBOT said that as far as he could learn from Dr. Brunton's therapeutics, bromide of ethyl recommended to be used with chloroform, so far from counteracting any of its effects was an extremely powerful drug and would only increase the effects of chloroform.

THE VALUE OF PRISON LIFE.—Under the heading "Back from Prison," an advertiser in a German daily paper states that she has just been liberated from prison where she had served a term for libel of a certain reputable physician. She further states that while in prison she had an opportunity, which the extent of her practice precluded before, of going over in her mind the histories of her many thousand cures, and from the material thus obtained she has been able to formulate a method by which she can positively cure consumption and rickets.

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TREATMENT OF ACUTE RHEUMATISM IN THE PARIS HOSPITALS.

DR. MARCEL BAUDOUIN has made the tour of the hospitals of Paris to ascertain the methods in vogue for the treatment of acute rheumatism, and has published the results of his inquiry in *La Semaine Médicale*.

Naturally, the medicine the most in favor is still the salicylate of sodium, which is everywhere the remedy first thought of, and generally in some manner prescribed. According to Dujardin-Beaumetz, it is the only specific medicine, of which, to obtain the full effects, the doses employed should be proportioned to the intensity of the rheumatism. He would prescribe fifteen grains every three hours, day and night, to very acute and febrile cases, and the treatment should be continued several days after the cessation of the pain and fever. There are but two contra-indications to the employment of this medicament, renal impermeability and pregnancy: for patients who may be laboring under the one or the other of these conditions, he would substitute exalgine, phenacetin, or antipyrine.

Talamon, of Bichat Hospital, thinks that there is no contra-indication to the employment of the salicylate, not even albuminuria. It is very important, says Talamon, to give large doses and to push them. Small doses, thirty to forty grains a day, amount absolutely to nothing. Begin with fifteen grains every two hours till you have given six doses; this is enough for the first day. The next day, eight such doses may be given; and this treatment must be kept up four, five, or six days, according to the tenacity and intensity of the malady. Ordinarily, by the fourth day, the fever has fallen, the pains and the articular swellings have ceased. Then the tapering-off method is begun, only four of the fifteen-grain doses being given each day for four or five days, then two doses a day for five or six days, the patient being kept in bed all this time. Relapses call again for the full doses. When the stomach

tolerates the medicine badly, it may be given with Vichy water, the patient swallowing the medicine in capsules (cachets), and washing it down with a small glass of Vichy. For neuropathic patients, he would occasionally combine the dose of the salicylate with twenty grains of bromide of potassium.

"All the therapeutics of rheumatism," says Professor Chauffard, "is summed up in two medicines, sodium salicylate and antipyrine." For several years past, he has resorted in preference to antipyrine, giving to adult patients from sixty to one hundred and twenty grains a day. The latter is a maximum dose rarely attained. The effect of the medicine in producing analgesia and fever-fall is immediate, and in most cases the swelling of the joints begins soon to abate. The antipyrine is ordinarily well borne, and produces none of the painful head-symptoms which sometimes follow the salicylate when given in full doses. If the sweating is too profuse, M. Chauffard prescribes concurrently with the antipyrine, several granules of atropine.

There is but one advantage which the salicylate has over antipyrine: it is an agent of elimination which favors diuresis and the removal of waste-proteids. It is, then, a good plan to associate with antipyrine as a corrective the usage of *milk diet* and *diuretic ptisans*.

Professor Straus prescribes salicylate of soda, but he gives it only twice in the twenty-four hours in the dose of forty-five to sixty grains; the first dose may be administered late in the afternoon and the second two or three hours afterwards. A convenient vehicle is peppermint water. He thinks that the effect of the medicament is much more energetic if it be administered in this way, than if the daily quantity (six to eight grammes) were divided into numerous small doses to be given every two or three hours during the twenty-four. The medicine is continued as long as the fever and swellings last; then it is given in diminished doses (the quantity being lessened by about fifteen grains a day) for five or six days. When the salicylate provokes profuse and inconvenient sweats, M. Straus gives an atropine tablet ($\frac{1}{10}$ to $\frac{1}{5}$ grain) in the evening.

M. Straus has no doubt that acute rheumatism is an infectious disease, caused by "an animated agent," but all attempts, thus far, by himself and others, to discover any specific micro-organism have failed. Everything points to the conclusion that it is not a streptococcus nor a staphylococcus, nor the pneumococcus; the efficacy of salicylate of soda is too manifest in typical rheumatism, and its action is too insignificant, if not nil, in affections due to the latter microbes to justify any supposition that they have any causal agency in rheumatism, though often found connected with the complications of acute rheumatism and in the pseudo-rheumatisms.

Professor Bouchard associates salicylate of soda (seventy-five grains in the twenty-four hours) with sodium bicarbonate (one hundred and fifty grains a day).

M. Barth, while prescribing salicylate of soda in

fairly large doses from the beginning of the sickness till convalescence is well established, insists upon complete rest in bed (at least three weeks) notwithstanding disappearance of the joint-swelling and fever, as an essential condition to good recovery. Where the salicylate is contra-indicated (from pregnancy, cardiopathy, Bright's disease, arterial atheroma), or badly tolerated, M. Barth has recourse to quinine and antipyrine combined (five grains of quinine with ten of antipyrine, three times a day.) At the same time he applies to the affected joints a series of blisters and gives diuretics, tonics, and sometimes vapor baths.

M. Barié, besides treatment by the salicylate of soda which is given in three daily doses of thirty grains *just before meals*, prescribes absolute rest and the application of soothing liniments to the joints which are kept constantly wrapped in wadding. The diet should be principally milk; he does not absolutely prohibit alcoholic stimulants. Is fond of ordering Vichy and other alkaline waters, and if the joint swellings tend to persist, he resorts to revulsives, as iodine paint and cantharidal collodion. In some cases, he finds benefit from rather large doses of phenacetin and exalgine.

M. Comby used to give quinine in acute rheumatism — fifteen to thirty grains a day. Now he trusts to salicylate of soda fifteen grains every two hours in severe cases. Where the latter medicine is not well tolerated, he resorts to quinine, in full doses. As accessory medicines, he prescribes purgatives and diuretics.

In acute rheumatism in children; M. Simon and M. Sevestre trust exclusively to salicylate of soda, giving from thirty to forty-five grains a day to children under six years of age. It is better to give the medicine in three or four large doses (eight to twelve grains) than in numerous small doses during the day. Diet to be almost exclusively milk. The joints are wrapped in wadding and covered with oiled silk.

M. Ollivier has tried antipyrine repeatedly, and not obtained satisfactory results, he has long discontinued the use of colchicum.

"In acute rheumatism, *à frigore*, the salicylate of soda still gives the best results; the daily quantity being from thirty to ninety grains, according to the age of the child."

FIRST ACTIONS OF WOUNDED SOLDIERS.

In an article on this subject, in the *Popular Science Monthly*, Mr. G. L. Kilmer relates some of his own observations during our civil war, and cites others reported on good authority. The sensation of a soldier when he is first wounded is often out of all proportion to the severity of the wound. His first action when he finds himself wounded is also largely dependent upon what he is doing at the time. It follows, therefore, that the first actions of severely wounded soldiers are very different from each other; but the effect seen on the stage where a man staggers, clasps the wounded spot and then falls is very rarely or never seen in battle. A slight wound is often felt more at the time than a fatal one. A spent ball may make the victim

feel as though an arsenal had struck him, whereas the wound which is finally fatal may be either not noticed or may be considered a slight prick. In a general way, when felt at all, bullets through muscle usually produce a burning sensation; when bones are broken, stinging accompanies the burning; when bones are hit but not broken, there is a numbing sensation in the whole region involved in the shock, followed very soon by severe and sometimes intense pain; when muscles and tendons are involved, there is a tugging sensation sometimes very slight; and shell wounds produce feelings similar to those from bullets. Cannon balls, as a rule, leave nothing behind to exhibit feelings. When a man feels that he has been hit, he often has a mixed sensation, as if not quite certain whether he wants to cry or swear. If a soldier is in a state of intense nervous excitement, he may apparently be entirely unconscious of a quickly fatal wound and may continue his way as if nothing had happened until he suddenly drops dead. Well authenticated cases are mentioned in which, after wounds through the heart and even after complete decapitation, the body has remained in the saddle with the arm stretched out as it was before the wound was received, for some seconds before falling. From his experiences upon the battlefield, the author formulates a rule that a man who is hit above the hips comes down. After a wound through an important organ, men, unless much excited at the time, generally sink at once, or reel and tumble with very little self-control. The wound and the fall create a temporary panic, but as long as consciousness remains, they strive to help themselves. A wounded man's first thought is of the rear of the column, not from fear, but because he expects surgical aid from that direction. As long as he can move, he goes towards the place of help; when no longer able to move, he makes himself as comfortable as possible and waits.

ELECTRIC LIGHTING IN ITS RELATION TO PUBLIC HEALTH.

A COMMITTEE of the Society of Public Medicine of France recently communicated a report¹ upon the subject of electric lighting (January 27, 1892), in which the above question is treated with reference to the general effect upon health, and as to its effect on eyesight. The conclusions are as follows:

(1) Under ordinary conditions of use, the electric light does not injure the eyesight.

(2) Electric light is superior to all methods of lighting known at the present time, since it has little or no effect upon the composition of the air and generates but little heat. Its employment may, therefore, be generally recommended for occupied apartments.

(3) The danger of fire arising from the use of electricity can be avoided by a careful arrangement. Some of the accidents are due to the contact of conductors of electric currents. The number of such accidents

¹ *Revue d' Hygiène*, February, 1892.

has diminished, in proportion as the use of electricity has increased, which proves that the accidents which were attributed to it in earlier periods were due to ignorance of the conditions of proper management. Attention should be called to the establishments or plants in which mixed light is used (electricity and gas), and to currents of high tension.

(4) There should be no special danger attributable to electricity in the establishment of central stations. The danger amounts to absolutely nothing if hydraulic motors are employed. If steam is used, then the danger is the same as that which attends any other industry in which coal-furnaces are employed for generating power, and all regulations intended for the protection of the public health and safety which are required for such furnaces or boilers suffice equally well for central electric stations.

MEDICAL NOTES.

A PRACTICAL USE OF BACTERIA. — It is reported that a few weeks ago a plague of mice threatened to destroy the whole harvest of Thessaly, in Greece. The Greek Government asked Professor Löffler, of Greiswald, to assist it, which he effectually did by inoculating some of the mice, and turning them loose, thus causing a fatal epidemic among them.

CHRISTIAN SCIENCE. — A case has recently been tried in Southern California which has attracted a good deal of attention. A young man suffering from an accumulation of pus in the frontal sinus, which had perforated into the orbit, was attended by a professor of Christian Science, who treated him by the usual expectant methods of that school. After five days the patient died of meningitis, the pus having also perforated into the cranial cavity. In the prosecution which followed, a few statements made by the defendant are interesting. She testified that Christian Science treated strychnine poisoning, the bite of a rattlesnake, smallpox, cholera and fevers in the same way. She admitted that surgeons were necessary in cases of broken bones, but that in the case at issue, surgery was not admitted, and that the pus which had accumulated would, by her system, be allowed to remain in the body. The jury, after remaining out all night, finally returned a verdict of not guilty. It was generally believed that this result was reached because the defendant was a woman, and that many women had appeared in court and did all that they could to elicit sympathy.

THE SOCIETY OF THE RED CROSS. — The fifth international conference of this society was held in Rome during the last week in April. Most of the nations of the earth were represented, and many distinguished men were sent as delegates. The Geneva treaty, from which the society may be said to have begun its existence, was signed in 1864 by France, Belgium, Italy, Sweden, Portugal, Switzerland, Holland, Spain, Denmark, and several German States. The United States was admitted in 1882. Conferences have been held at varying intervals, this being

the fifth. The King of Italy has given ten thousand francs for investigations as to the best method by which each soldier on going into battle may be provided with materials for immediate use if wounded. Medals will also be prepared as prizes in an international exhibition of materials and apparatus for use on the battlefield. This exhibition will be held in connection with the next international medical congress. Among the subjects discussed were: the practical use of floating hospitals; the protection of the red cross emblem from unauthorized use, as for proprietary medicine advertisements, and the like; free transportation of supplies, and popular instruction in red cross methods.

THE STOMACH AND THE CORSET. — In a recent essay, published in Paris under this title, Dr. Chapotot, among other disadvantages of tight lacing, describes its effect upon the stomach, especially in connection with the gurgling sounds in the epigastric region often noticed in young women. These noises he attributes to a vertical bilobulation of the stomach. The air, during inspiration with any fluid present, is pushed from the upper to the lower lobe and during expiration is forced back again by the pressure of the abdominal muscles. In passing by the constriction, this air and liquid produce the characteristic gurgling sounds. If the constriction is removed the sounds are no longer heard.

NEW ENGLAND.

THE AMERICAN SURGICAL ASSOCIATION is now in session in Boston. On Tuesday morning the President's Address was delivered by Dr. Phineas S. Conner, in the Natural History Building. Several interesting papers were read and discussed, a detailed account of which will be given in our columns next week. Between thirty and forty members from other cities are present.

The following officers and members were elected at the Executive Session: President, Dr. N. Senn, of Chicago; Vice-Presidents, Dr. W. W. Keen, Philadelphia, Dr. Chas. B. Porter, Boston; Secretary, Dr. J. R. Weist, Richmond, Ind.; Treasurer, Dr. John B. Roberts, Philadelphia; Recorder, Dr. J. Ewing Mears, Philadelphia; Members of Council, Dr. Roswell Park, of Buffalo, and Dr. R. F. Weir, New York; Member of the Executive Committee of the Congress of American Physicians and Surgeons, Dr. R. McLane Tiffany, Baltimore — alternate, Dr. James McCann, Pittsburgh.

It was decided to hold the next meeting in Buffalo, in May, 1893; and Dr. Roswell Park was elected Chairman of the Committee of Arrangements.

The following were elected to membership: Dr. John B. Deaver, Philadelphia; Dr. Frederick H. Gerrish, Portland, Me.; Dr. Wm. S. Halsted, Baltimore, Md.; and Dr. H. R. Wharton, Philadelphia.

CENTENNIAL CELEBRATION OF THE CONNECTICUT MEDICAL SOCIETY. — The Connecticut Medical Society was organized in New Haven, on May 25, 1792. The centennial celebration was held in the same city

last week, and was very largely attended. Several interesting papers were read, describing the condition of medicine, in New England, prior to, and subsequent to 1792. The following officers were elected: President, C. B. Newton, M.D.; Vice-President, Francis D. Edgerton, M.D.; Secretary, N. E. Wordin, M.D.; Treasurer, W. W. Knight, M.D.

NEW YORK.

THE MORTALITY REPORT FOR THE WEEK ending May 21st, shows a gratifying improvement in the health of the city. The number of deaths was 854, which is 26 below the average of the corresponding weeks for the past five years, and represents an annual death-rate of 24.48. There was no death from typhus fever, and only one from small-pox reported. Measles, scarlet fever and diphtheria, however, still continue very prevalent.

RELIEF FOR THE OVERCROWDED ASYLUMS. — The sale to the city of a portion of Ward's Island, hitherto owned by the State, having been authorized by law, the Board of Emigration Commissioners, who formerly had charge of it, have transferred it to the municipal authorities: and the work of relieving the overcrowded city asylums for the insane has already commenced, by the occupation of the buildings that have been used by the Emigration Bureau, some six or seven hundred patients from the institutions on Hart's and Blackwell's Islands having been removed to them.

THE MANHATTAN HOSPITAL. — The handsome and well-appointed new buildings of the Manhattan Hospital and Dispensary was opened for inspection on May 26th, when a reception was given by the Board of Managers and the Ladies' Association of the Hospital. This institution is doing an excellent work in the upper part of the city, the district covered by it extending from 86th Street to Spuyten Duyvil and from Sixth Avenue to the Hudson River. It has been closed for two months on account of the improvements being made.

Miscellany.

SUBCUTANEOUS BLOOD INJECTION AND TRANSFUSION.

VON ZIEMSSEN,¹ in a paper before the Congress for Internal Medicine in Leipsic, describes his method of injecting blood subcutaneously as a substitute for transfusion. Blood is taken from a vein through a hollow needle into a sterilized syringe and immediately injected into the subcutaneous tissue of the thigh or back. It is then massaged actively until no tumor is felt. In this way it is prevented from coagulating, at least until it has become thoroughly diffused in the subcutaneous tissue. By this method he has injected as much as 400 cubic centimetres at one time. The process is painful so that it is generally necessary to narcotize the patient. The region remains sensitive for some time but shows no signs of inflammation.

¹ Münchener med. Woch., May 10th.

For transfusion he employs the following method, and has never produced any disagreeable results with it. A hollow needle is introduced into the vein of the person from whom the blood is to be taken and another one into the vein of the patient. Three syringes each holding 25 cubic centimetres are thoroughly cleaned and warmed, blood is then drawn into the syringe which is immediately detached and connected with the needle in the patient's vein and emptied before coagulation can begin. While the first syringe is being emptied, the second is being filled. The first after being emptied is washed in sterilized water while the third is being filled with blood. When the third is full, the first has been washed and is ready to be used again. In this way an almost constant stream of blood passes from one person to the other. The needles are put into the vein directly without any previous incision of the skin.

THE BACILLUS OF ECLAMPSIA.

GERDES,² in the pathological department of the University at Halle, has found a bacillus in the liver, lungs, kidneys and blood of a severe case of eclampsia. Cultures of this bacillus when inoculated in rats and mice cause shallow respiration, coma, subnormal temperature, and in the mice, convulsions. It is very virulent, causing death in a short time. In guinea-pigs intravenous injections caused convulsions, intraperitoneal did not. The bacilli were found often in the form of bacillary emboli, the starting point of which was probably a focus in the placenta.

INTESTINAL EVACUATION IN OPERATIONS FOR OBSTRUCTION.

MR. GREG SMITH,³ in a paper read before the Royal Medical and Chirurgical Society, advocates operative evacuation and drainage of intestinal contents in cases of obstruction of the bowels where distension is a marked feature. Mere over-distension of the intestinal walls is a potent factor in the production of obstruction: physical and physiological causes combine to render an over-distended gut incapable of passing onwards its contents. Therefore operative treatment of intestinal obstruction is not completed until this continuing cause is removed. According to the nature of the case, the author believes that the measures adopted should be one of the following: (1) Simple evacuation of contents with immediate return of the gut; (2) evacuation with drainage for several hours or days, and subsequent closure and return of the gut; (3) evacuation with drainage that may be permanent. In operations, while the stomach is distended with fluid, anesthesia should never be used. Either the stomach should be artificially emptied, or the operation should be performed with the help of a local anesthetic. Anesthesia should be continued only for so long as is necessary to make the parietal incision and place the sutures. These measures are intended to supplement and complete the ordinary surgical methods for relief of the strangulation, and in no sense to replace these.

¹ Deutsche med. Woch., May 12th.

² British Medical Journal, March 12, 1892.

A UTERUS IN A SCROTUM.

A CURIOUS case of hermaphroditism was recently reported by M. Beckel to the Académie de Medicine.¹ A man, twenty years of age, has had since birth an inguinal hernia, to relieve which an operation for radical cure was undertaken. The hernial sac was found empty, but in its posterior wall there was found, covered by peritoneum, a triangular body, which was supposed to be an intestinal diverticulum. Further examination, however, showed that the inguinal canal was empty, and that the organ in question had no connection, whatever, with the digestive tube. Compression of the abdomen above the ring resulted in the extrusion through the external inguinal ring of an ovoid pearly body resembling the testicle. Lying parallel and above this body, and united to it, was a fringed cystic organ, which could not be anything else but the Fallopian tube. All these structures were carefully isolated by dissection and extirpated. Cicatrization was complete at the end of ten days. Examination of the extirpated mass revealed (1) a bicornate uterus, the mucous membrane of which was lined by ciliated epithelium; (2) a Fallopian tube and a testicle provided with an epididymis and a vas deferens; (3) a broad ligament enclosing these organs. This is the only known example of female sexual organs being contained in the scrotum of a man. The patient's appearance and habits were entirely those of a male.

by the sphincter. The external plegget soon becomes felted together into a pad, retained by the fibres caught by the sphincter. Where the piles are chiefly internal, the hamamelis may be applied in the dose of half-a-drachm to a drachm, either diluted with water or undiluted, by injecting it within the anus by means of a glycerine syringe. Itching and eczema may be relieved by eau de cologne.

Correspondence.

ANOTHER MUSICAL ANUS.

UNIVERSITY OF MICHIGAN,
ANN ARBOR, May 29, 1892.

MR. EDITOR:—Your correspondent, K., refers to Dante's mention of a case of musical anus. I cannot compare the references now, but Montaigne, in one of his many essays interesting to medical men ("On the Force of Imagination"), gives the following:

"St. Augustin (*de Civit. Dei.* xiv, 24, and the Comment. of Vives, *in loco*), speaks of having seen a man who could command his back trumpet to sound as often as he pleased, and Vives, supports this statement with another example, in his time, of one who could do this in tune."

The above seems to be of sufficient interest—pathological as well as literary—to be put on record.

Yours truly,

D.

THERAPEUTIC NOTES.

CALOMEL FOR HEMORRHOIDS.—James² has for some years treated hemorrhoids by applying calomel to them with the finger alone, especially when inflammatory action was obvious in the hemorrhoidal mass, characterized by mucous discharge and hemorrhage. All these symptoms were speedily relieved.

METHYL-BLUE IN TUBERCULAR AFFECTIONS.—Althen³ has used methyl-blue for pulmonary and laryngeal tuberculosis with very good results. It may also be used for the local treatment of tubercular ulcers. Internally twenty-two grains were given daily. Strangely if it occurs may be relieved with flaxseed tea. Occasionally gastric symptoms appear, in which case it is necessary to suspend the treatment and to begin again with small doses gradually increased.

THE TREATMENT OF PILES WITH HAMAMELIS.—In a paper on the treatment of piles and allied afflictions read before the Medical Society of London, Dr. Lauder Brunton⁴ recommends, especially brisk horse exercise. Another useful exercise is to touch the toes with the fingers, keeping the knees straight, several times every morning. Of the utmost importance is a regular action of the bowels. If the piles tend to come down much, it is better for the patient to get into the way of emptying the bowels every night before going to bed. It is always well for the patient to wash the anus immediately after a motion, with a soft sponge. A small plegget of prepared wool dipped in hamamelis should be introduced within the anus, and another introduced so far that a few fibres of it at least are caught

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, MAY 21, 1892.

Cities.	Estimated population for 1890.	Reported deaths		Deaths under five years.	Infectious diseases.	Acute lung diseases.	Scarlet fever.	Measles.	Diphtheria and croup.	Percentage of deaths from
		In week.	In month.							
New York	1,515,301	854	360	18.00	23.88	3.34	4.56	5.52		
Chicago	1,069,301	457	211	14.52	14.58	4.44	4.18			
Brooklyn	845,345	361	130	14.84	19.32	3.96	2.24	8.12		
Baltimore	511,170	295	10	3.46	3.46	—	7.79			
Boston	448,477	180	45	14.84	16.96	5.30		6.26		
Cincinnati	326,908	32	35	14.17	8.72	3.27		4.36		
Cleveland	296,000	85	35	10.62	16.52	1.18		2.36		
Pittsburg	240,000	85	35	5.90	17.70	1.17		2.36		
St. Paul	240,000	100	40	4.00	12.00	1.41		2.52		
Washington	282,262	106	23	10.34	6.58	.94		2.82		
Nashville	76,165	27	6	11.10	3.70			3.70		
Charleston	65,165	28	16	32.13	3.57	—				
Portland	36,425	13	1		30.76	—				
Worcester	81,425	10	1	18.75	6.25	—		9.39		
Providence	17,586	31	7	6.46	4.46	—				
Fall River	74,386	34	17	2.94	26.46	—		2.94		
Cambridge	70,622	22	5		13.65	—				
Lynn	55,727	15	4	13.33	20.00	—		6.66		
Lawrence	44,654	14	4	1.43	7.14	—				
Springfield	44,149	14	4	14.28	4.27	—		7.14		
Easton	40,733	20	8	10.00	25.00	5.00	7.14	7.14		
Ediford	35,637	13	5	30.76	23.07	—		15.38		
Holyoke	30,801	10	1		10.00	—				
Salem	27,360	8	0	12.50	25.00	—				
Chelsea	27,000	11	1		33.33	—				
Haverhill	27,294	9	2		33.33	—				
Fauntlon	25,445	8	2		12.50	—				
Glocester	24,651	5	3		60.00	—				
Malden	23,031	8	1	12.50	—	—				
Pittsburg	22,037	3	1		—	—				
Wellesley	18,275	4	1		—	—				
Pittsfield	17,281	4	2		50.00	—				
Quincy	16,723	6	1		—	—				
Northampton	14,968	8	1		—	—				
Newburyport	13,917	6	2	33.33	—	—				
Marlboro	13,108	2	1		50.00	—				
Medford	11,079	3	0		—	33.33	—			
Everett	11,065	5	2	20.00	—	—				
Hyde Park	10,193	6	0	—	16.66	—				
Peabody	10,151	5	0	20.00	20.00	—				

Deaths reported 2,711; under five years of age 1,036; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 395.

¹ Lancet, April 30th.

² British Medical Journal, February 20th.

³ Münchener med. Woch., January 5th.

⁴ Lancet, March 12th.

acute lung diseases 487, consumption 316, diphtheria and croup 128, scarlet fever 60, measles 55, diarrhoeal diseases 47, typhoid fever 45, cerebro-spinal meningitis 22, whooping-cough 14, erysipelas 14, malarial fever 9, small-pox 1.

From diarrhoeal diseases New York 10, St. Louis 8, Charleston 5, Chicago 4, Brooklyn and Coney Island 5 each; Boston, Cincinnati, Pittsburg, Washington, and Lawrence 1 each. From typhoid fever Chicago 24, New York 5, St. Louis 3, Boston, Washington, Charleston and Newburyport 2 each, Cleveland, Worcester and New Bedford 1 each. From cerebro-spinal meningitis New York 8, Brooklyn 4, Chicago 3, Washington 2, Boston, Nashville, Worcester, Lynn and Hyde Park 1 each. From whooping-cough New York 7, Chicago and Cincinnati 2 each, Cleveland, Charleston and Worcester 1 each. From erysipelas New York 4, Chicago 3, St. Louis and Cincinnati 2 each, Cleveland, Milwaukee and Washington 1 each. From malarial fever New York 1, Brooklyn 2, Boston, Charleston and Fitchburg 1 each. From small-pox New York 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 10,189,449, for the week ending May 14th, the deaths were 204. Deaths reported 3,875; acute diseases of the respiratory organs (London 304, measles 222, whooping-cough 160, scarlet fever 58, diphtheria 38, diarrhoea 36, fever 20).

The death-rates ranged from 12.4 in Croydon to 28.1 in Wolverhampton; Birmingham 21.7, Bradford 20.7, Huddersfield 23.8, Hull 18.8, Leeds 17.4, Leicester 20.3, Liverpool 24.6, London 19.5, Manchester 24.6, Newcastle-on-Tyne 19.0, Nottingham 15.0, Sheffield 25.0, Sunderland 22.8, West Ham 13.0.

METEOROLOGICAL RECORD.

For the week ending May 21, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Date.	Barometer		Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	Daily mean.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.-15	30.14	51	53	49	97	100	98	S.E.	N.W.	10	9	R.	.29
M.-16	29.41	64	76	51	85	41	63	S.W.	W.	18	16	O.	.02
T.-17	30.06	63	73	56	99	34	36	W.	W.	10	12	C.	.01
W.-18	30.63	65	75	55	97	57	46	N.W.	E.	14	9	C.	.01
T.-19	30.06	48	50	45	84	82	81	E.	E.	14	21	C.	.02
F.-20	30.06	48	50	45	84	82	81	N.E.	N.E.	24	6	R.	.01
S.-21	30.08	44	45	42	85	100	92	E.	E.	22	25	R.	.11
MEAN													.03
MEAN													
	29.96	54	58	48	62	46	72			16	14		

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threat; snow; N, snow. + Indicates trace of rainfall. — Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 21, 1892, TO MAY 27, 1892.

CAPTAIN HENRY S. TURILL, assistant surgeon, U. S. A., granted leave of absence for three months.

CAPTAIN AUG. A. DELOFFRE, assistant surgeon, U. S. A., the leave of absence on surgeon's certificate of disability granted in S. O. 93, A. G. O., April 29th, is extended one month on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 28, 1892.

T. J. TURNER, medical director, retired, granted one year's leave of absence with permission to leave the United States.

H. N. T. HARRIS, assistant surgeon, promoted to passed assistant surgeon.

GEORGE B. WILSON, assistant surgeon, promoted to passed assistant surgeon.

MARY F. GATES, assistant surgeon, ordered to Naval Hospital, Portsmouth, N. H.

J. F. UHL, passed assistant surgeon, detached from Naval Hospital, Portsmouth, N. H., and to the U. S. S. "Chicago."

J. C. BYRNES, passed assistant surgeon, detached from the U. S. S. "Chicago" and granted three months' leave of absence.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING MAY 21, 1892.

MURRAY, P. D., surgeon. Granted leave of absence for fifteen days. May 14, 1892.

HAMILTON, J. B., surgeon. Granted leave of absence for eleven days. May 20, 1892.

GAASSAWAY, J. M., surgeon. Granted leave of absence for ten days. May 10, 1892.

GODFREY, JOHN, surgeon. When relieved as medical inspector of immigrants, to resume command of station at New York. May 11, 1892.

IRWIN, FAIRFAX, surgeon. To proceed to New Bedford, Mass., on special duty. May 17, 1892.

CARTER, H. R., surgeon. To proceed to Gallipolis, Ohio, on special duty. May 18, 1892.

WHEELER, W. A., surgeon. Detailed as medical inspector of immigrants, port of New York. May 11, 1892.

BANKS, C. E., passed assistant surgeon. To assume command of Service at Portland, Me. May 11, 1892.

DEVAN, S. C., passed assistant surgeon. To assume command of Service at Norfolk, Va. May 11, 1892.

PERRY, T. B., passed assistant surgeon. To assume charge of Cape Charles Quarantine Station. May 14, 1892.

WOODWARD, R. M., passed assistant surgeon. Granted leave of absence for five days. May 16, 1892.

VAUGHAN, G. T., passed assistant surgeon. Detailed as recorder of Board for the physical examination of candidates, Revenue Marine Service. May 9, 1892.

WERTEBAKER, C. F., assistant surgeon. Granted leave of absence for seven days. May 10, 1892.

HOUGHTON, E. R., assistant surgeon. To assume command of Service at Vineyard Haven, Mass. May 11, 1892.

MAINE MEDICAL ASSOCIATION.

The fortieth annual meeting will be held in Common Council Chamber, City Building, Portland, Me., Wednesday, Thursday and Friday, June 8th, 9th and 10th. The Annual Oration by A. H. Burbank, M.D., on Thursday evening, after which there will be a reception and banquet, given by the physicians of Portland.

EDWIN M. FULLER, M.D., President.
C. E. WILLIAMS, M.D., Auburn, Secretary.

RECENT DEATHS.

THOMAS G. RICHARDSON, M.D., died in New Orleans, May 26th, aged sixty-five. During the war he was medical director of the staff of General Bragg. In 1868 he went to New Orleans as Professor of Anatomy in the University of Louisiana. He was president of the American Medical Association in 1879.

AUGUST WILHELM VON HOFMANN, M.D., Professor of Chemistry in Berlin, died May 5th, aged seventy-four years. In 1848 he was called from Bonn to London where he was connected with the School of Chemistry until 1862, at which time he was called to Berlin. His most important work was in connection with the chemistry of the coal-tar derivatives and his discovery of the aniline colors.

BOOKS AND PAMPHLETS RECEIVED.

Catalogue of the Harvard Medical School Association, 1892.

Thirty-first Annual Report of the Cincinnati Hospital for the Year 1891.

The Fifty-third Annual Report of the Boston Lunatic Hospital for the Year 1891.

The Annual Report of the Health of the Imperial Navy for the 23d year of Meiji (1890).

Thirty-fourth Annual Report of the Washingtonian Home for the Year ending April 25, 1892.

The Science and Art of Midwifery. By William Thompson Lusk, A.M., M.D. New edition, revised and enlarged. New York: D. Appleton & Co.

A Baby's Requirements. By Elizabeth Robinson Scovil, Superintendent of Newport Hospital, Newport, R. I. Philadelphia: Curtis Publishing Company. 1892.

Eleventh Annual Report of the State Board of Health of Illinois for the Year 1888, with an Appendix containing the Official Register of Physicians and Midwives, 1892.

Clinical Lecture: Tenotomy by Open Incision for Talipes Equinus; Torticollis from Rheumatoidal Arthritis; Subcutaneous Tenotomy of Sternio-Cleido-Mastoid for Torticollis. By H. Augustus Wilson, M.D., Philadelphia. Reprint. 1892.

Addressees.**THE MEDICAL PROFESSION AND THE COMMONWEALTH.¹**

BY FRANK WINTHROP DRAPER, M.D.

In the discharge of the distinguished duty which places me in your presence at this time, I ask your indulgent attention to a study of the relations which, as physicians, we hold toward the Commonwealth.

Our obligations to the State derive added significance from the circumstances attending the incorporation of the Society of which we are the Fellows. It was at the time when the national government was in revolutionary instability and our own Commonwealth was in its infancy, that a few medical men, chiefly resident in Boston, saw the desirability of an association that should bring qualified practitioners into closer relations for their own benefit and for the good of the public. Their purpose was to make a "body politic and corporate" which should establish "a just discrimination" between educated practitioners and ignorant pretenders in medicine, a purpose that had in view the welfare of the community in its broadest sense. They therefore asked the General Court to give permanent expression to this object by granting the name of the Commonwealth to the new guild, and by bestowing corporate privileges that should correspond therewith. That request was granted and we are the *Massachusetts* Medical Society, broader than medical sectarianism, abhorring exclusiveness, loyal ever to the State's highest interests, proud of the charter, which, bearing the historic names of John Hancock and Sam Adams in attestation of its validity, the State bestowed upon us in 1781, the first document of the kind granted under the constitution. The Commonwealth thus became our *alma mater*. Besides giving her name to our newly created body, she endowed us with valuable rights; and she bestowed other encouraging assistance and recognition. If she did not actually rock the infant "body corporate" in the "cradle of liberty," she added a flavor of legality and dignity to our first proceedings by loaning the "county court-house in Boston," as the place of meeting for Dr. Holyoke and his thirty fellow-founders, and placing us under new obligations of gratitude later by permitting meetings of the Society in the State-house and in other public buildings belonging to the State.

Such was the beneficent and disinterested aim of our fathers in founding this association; such the gracious and helpful attitude of the Commonwealth in aiding that foundation. It is becoming in us, the heirs and beneficiaries of the endowment thus established, to ask how the aim of its creators has been fulfilled during all the years of the century now drawing to its close; to what degree the prosperity of the State has been advanced by the Fellows of this organization; and what are our present duties to the public in the discharge of the trust which our organic charter imposes. The little company of physicians which assembled in the county court-room near Scollay Square, in November, 1781, has by normal growth become a multitude so large that it requires an entire block of buildings to supply the needs of its anniversary meetings, outrunning all less adequate accommodations. Keeping pace with the progress which has made our Commonwealth

a leader in all things that promote the highest civilization, our organization holds, and has long held the highest rank as the representative of the best type of scientific and practical medicine.

Massachusetts, in founding its constitutional government in 1780, established three co-ordinate, yet independent, departments; and ordained that the legislative, the executive and the judicial functions should be forever distinct. This three-fold distribution of organic powers and duties in the State invites consideration of our relations, as physicians, to each of the fundamental departments, and leads us to ask what has been accomplished, and what remains to be done in directions wherein the Commonwealth and the medical profession are mutually concerned.

I. To what extent, then, in the first place, has the State, through its General Court, as its legislative department, enacted laws that are of particular interest to the members of our profession as a class? An inspection of the public statutes will be rewarded with the discovery of the fact that when we compare the legal privileges and obligations which to-day apply to Massachusetts physicians, the obligations far exceed the privileges. The State exacts more than it gives. When we have mentioned exemption from jury and militia duty, some preferment of the claims of physicians against insolvent estates, the rarely used permission to dissect dead bodies, and the happily infrequent opportunity of attending a judicial hanging, we have included all the essential benefits which the Commonwealth bestows on medical practitioners. It is not a long list of special indulgences, or a very valuable one.

The critical student of the public statutes who searches for any evidence therein that the Commonwealth through its legislature has ever set up any standard of education or skill on the part of medical men, will find little in existing laws to reward him for his inquiry. There is no attempt in the statutes to classify or to define "physicians," to declare by legislative act who may practise medicine and who shall not. Massachusetts has ever been hospitable to all sorts and conditions of men, and she welcomes with a reckless graciousness any who choose to pass her open door. She knows no sects, no schools, no differences among physicians; all doctors are alike to her, and, according to the assembled wisdom of her law-givers, they can safely be left to take care of themselves according to the principles of the common law.

This attitude of Massachusetts, allowing unrestricted freedom in the practice of physic, has exposed the State to much criticism. It has given rise to the impression that her present policy of non-interference with medicine has always prevailed, and that she is now simply carrying forward a traditional rule of conduct in obstinate indifference to the lessons of experience learned in other and younger communities. This inference is incorrect. Long before any of the modern devices for statutory regulation of medical practice were announced, long before many of the Commonwealths which are now taunting us had been staked out in the primeval wildernesses of the West and Northwest, Massachusetts saw the need of controlling the pretensions and active arrogance of charlatancy within her borders and the clear duty of bestowing her recognition upon reliable men and women.

We need not look beyond the words of our own charter of incorporation to find full evidence that long

¹ The Annual Discourse delivered before the Massachusetts Medical Society, June 8, 1882.

ago the State discriminated sharply between those who merited confidence and those who deserved to be restrained. The whole document, from its preamble to its conclusion, is filled with the flavor of this wholesome feeling. But that which applies itself chiefly to our purpose in this regard is the remarkable sentence which, like a strong back-bone, is built solidly into the very middle of the charter :

"And whereas it is clearly of importance, that a just discrimination should be made between such as are duly educated and properly qualified for the duties of their profession, and those who may ignorantly and wickedly administer Medicine, whereby the health and lives of many valuable individuals may be endangered, or perhaps lost to the community:

"Be it therefore enacted by the authority aforesaid, That the president and fellows of said society, or other such of their officers or fellows as they shall appoint, shall have full power and authority to examine all candidates for the practice of physic and surgery, who shall offer themselves for examination, respecting their skill in their profession."

This placed a premium on proper qualifications and proved fitness. It established a standard and made our society the keeper of that standard, and if with the recently accepted Bill of Rights in popular remembrance, it did not forbid the practice of medicine by those who neglected or failed to become licentiate under this charter, it nevertheless gave the community, what it had not had before, a chance to have its medical practitioners classified according to their worth and learning. It was a most responsible function to place upon this young organization, but the trust was adequately fulfilled then and is to-day being fulfilled; and the men and women who possess the letters testimonial of the censors of the Massachusetts Medical Society attesting their demonstrated and approved knowledge and fitness need no further passport to the full confidence of the people and no better certificate to distinguish them from those who "ignorantly and wickedly administer medicine."

But broad as our charter was, in its permissive provisions, it was not in the least useful as prohibitive legislation. We might admit all duly qualified practitioners to our ranks, we had no control over the disqualification pretender who cared little for the privileges which the Massachusetts Medical Society offered. This weak negative side in the then current statutes came at length to be seen, and in 1818 a law was passed which was designed to remedy this defect. It is of interest to us that the State continued to turn to this Society to aid in the fulfilment of its purpose. The statute provided that every person practising physic or surgery in Massachusetts, without a medical degree from some college or university, or without being licensed by some medical society, or college of physicians, or by three Fellows of the Massachusetts Medical Society to be designated in each county by the Councillors, should not have "the benefit of law for the recovery of any debt, or fees, accruing for his professional services"; and every licensed practitioner was required to deposit a copy of his license with the clerk of the town where he resided. Just a year later, the general court modified its predecessor's work and enacted that no person entering the practice of physic or surgery after a specified date should be entitled to the benefit of law for the recovery of any debt or fee for his professional services unless, previously to ren-

dering those services, he had been licensed by the regularly appointed censors of the Massachusetts Medical Society or had been graduated a Doctor of Medicine in Harvard University.

This law, it will be observed, distinctly recognized the principle of the regulation of medical practice, and this was the only good purpose which it served. It had two ludicrously weak features; it did not provide any punishment for failure or neglect to procure the required license, and while it presumably made the way of the irregular practitioner a difficult one in the matter of collecting his fees, it left him perfectly free to do what no reputable physician ever does, it left him free to take his pay in advance. Nevertheless, the law was so satisfactory and acceptable in its working, that it was re-affirmed in all its main features in the Revised Statutes of 1836, seventeen years later, this Society being still designated by name as the authority to manage the machinery of examination and licensing; but there was this important modification — the courts were no longer closed to unlicensed physicians. This anomalous statute (*vox et preterea nihil*) remained in force without amendment until 1859, when it dropped out of sight in the general revision of the laws made by the legislature of that year. Since its disappearance from the statute book there has been nothing unlriendly in "ignorantly and wickedly administering medicine" to the people of Massachusetts in violation of any statute; the principles of the common law are the only safeguard.

Meanwhile, during this period of thirty years, a wave of legislative virtue has swept over the land with reference to the regulation of medical practice. One State after another has passed restrictive laws of greater or less stringency but with the single aim of discouraging quackery. How effective these laws have been in accomplishing their purpose, or how zealously they are executed, in the various communities, we are not now concerned in determining; the suggestive fact is that Massachusetts stands almost alone in her attitude of toleration. Of one result of this state of affairs we are all clearly aware. The action of neighboring States, near and more distant, in requiring irregular practitioners to move on and to stand not upon the order of their going, has brought to our too hospitable territory a horde of medical pretenders who have not been slow in discovering the advantages of an asylum here. It is safe to state that never in the history of the Commonwealth has such a wide variety been offered to her people in the matter of choosing a medical counsellor in time of sickness, and that never has the class of charlatans been so numerous or so haughty.

And what a motley company they are, these disreputable parasites upon the medical profession! They offer to the student of anthropology a great diversity of types, ranging all the way from the long-haired male Indian doctor to the short-haired female Christian scientist; creatures with "natural" and supernatural powers, extraordinary owners of superior intellects who find no difficulty in the problem of curing the incurable; bio-chemists, nature-pathists, mesmerists, vivipaths, psychopaths, botanic healers, magnetic healers, — a great procession of social pests with labels designed to captivate the unwary and the credulous.

But these people who boldly affect superiority by announcing themselves openly as irregular practitioners, and by assuming an eccentric or distinctive title

in proof of it, are not the worst representatives of their class. The charlatans who are most harmful are those who deliberately and fraudulently take on the simple designation of "physician," and so far as any outward sign is concerned are not to be distinguished by the public from the best and noblest members of our profession.

Then, there is another form of fraud which manifests itself in the shape of "medical institutes." These are evidently business enterprises simply, and the management being in the hands of several persons, who are always announced as distinguished, successful and trustworthy exponents of medical science, the victims of disease read the obvious lesson that in a multitude of such counsellors there must be safety.

But, however, we may classify and differentiate these people, they all have certain characteristics in common; there is nothing beneficent in their motives or actions; they are to the last degree mercenary; they are busy obtaining money under false pretences; they add nothing to the common stock of knowledge; they defile the columns of the daily press and of the religious weekly journals with disgustingly suggestive notices of their pretensions and insinuating invitations to walk into their parlors. Through their advertisements, they make open solicitations to the victims of lustful practices to add crime to imprudence, and they cover with the thinnest disguise their public and defiant announcements that they will commit unlawful acts and will take all risks of detection and exposure. They deface all accessible surfaces with their bold and lying promises, and offend good morals by their too open allusions to unmentionable subjects. Like juggling fiends, they take advantage of every form of human misery to raise hope where hope is vain, and they wickedly and cruelly draw the last possible dollar from their credulous victims, who get small comfort from the fact that payment has been made in advance for the wretched disappointment of unfulfilled agreements. If in such a case death comes to the relief of these double sufferers, the ignorance of the only physician recognized by the statutes in such a relationship is attested by the manner in which the required certificate of the cause of the death is executed, sometimes unintelligibly, sometimes fraudulently, covering a crime under the name of an innocent disease, and always raising a doubt and question of the value of such data for the purpose of vital statistics.

Can it be possible that Massachusetts, which has long defended its claim to the possession of superior wisdom in the care of all matters pertaining to public health and public morality, is willing to tolerate this state of affairs indefinitely? Is not her indifference reprehensible? And have not we, as physicians, remained far too quiescent under these growing evils? Have we not evaded a duty while we maintained a neutrality? Ought we not now to speak out boldly and persistently until some effective measure has been adopted to control and suppress the fungous growth of quackery? It is to legislation, supported by an enlightened public sentiment, and rendered fruitful by an energetic enforcement, that we must look for the real remedy, legislation that shall be practical without being cumbersome or needlessly burdensome. This is not the occasion for outlining the details of such legislation; whether the statute should supply a method of registration administered by some already established board, like the State Board of Health; or

should require examination and license through the agency of a purely medical board; or should be framed upon the model of the English law which forbids the false and fraudulent use of any name, title or description, implying that its user is a physician or surgeon, when he has not been educated or licensed as such, — all these matters may safely be left to legislative wisdom. But the main point is that the Commonwealth should afford its citizens some guarantee that the persons who are permitted to practise medicine are trustworthy by virtue of education. Above all, let it be understood and insisted upon that this guarantee, with its attendant conditions and penalties, is not a matter into which sectarian medicine enters in any degree. Let there be an avoidance of all differences relating to schools of practice. Let not the smoldering embers of medical contention be drawn out of the ashes and fanned into life for the gratification of controversialists. Let it be remembered that this is not a question of therapeutics or of medical ethics, but a question of medical education, with the fundamental purpose of excluding from medical practice those who are unfit for it through ignorance or wickedness.

But, some will say, how does this matter concern the Massachusetts Medical Society, as a society? Why need this organization trouble itself to take any part in securing legislation against quackery? Are we not in the possession of an indefeasible charter, with ample protection of our rights and privileges as physicians? Does not the public recognize in this association a body of medical men and women offering ample evidence of the trustworthiness and intelligent skill that are desired? If any educated physician in Massachusetts wishes to acquire the benefits of this recognition, by entering this fellowship, is not the way easy and the method simple? Why need we, an old and honored body of regular physicians, fret about quackery? Do not the charlatans give us new and profitable business by their blunders? Why should we meddle with the inherent right of every individual to choose his adviser in case of injury or sickness? Will not the prudent man make seasonable inquiry and select the best; and cannot we wisely leave this decision without dictation, sure that in the long run the fittest will survive? Why need we ask to have new burdens and restrictions placed upon us?

From the point of view of expediency and propriety, as they apply to this Society, this course of reasoning is clearly correct. This organization will do well to maintain its independent attitude. It has no wish for a renewal of the legislation which formerly made it the sole censor of medical practice in this State. It is content to attend to its own affairs. It has no ambition to pose as a monopolist in medicine. It sets an example in medical tone, and in its traditions and present aim, cordially favors the highest attainable development in medical education and medical practice, but it has seen the mischief and disappointment which have attended attempts made, in its name, to influence and procure medical legislation. But this view does not absolve us, its individual members, from grave responsibility regarding questions of public welfare. We are citizens of the Commonwealth as well as physicians; and, as citizens, jealous of the good name of Massachusetts, ashamed of her false position in the matter now under discussion, we have the right and the duty to protest that some remedy should be applied to eradicate the evils which I have tried to describe. We

ought to do all in our power to secure some practical process of sifting which shall afford to the people an assurance that the State is unwilling to trust the lives and health of her inhabitants to charlatans and adventurers. We ought to insist, and insist again, that it is not for ourselves, or to promote our own interests, that we wish the State to interfere, but that it is in behalf of the thousands in her population who, through lack of knowledge or discrimination, become the victims of chicanery and fraud. We ought to demand that protection for the classes of people that do not and cannot protect themselves. If professedly intelligent and cultured persons choose to demonstrate their wisdom in a peculiar fashion, by amusing themselves with the mind-cure, and Christian science, and hypnotism, and other genteel fads, it should be with the distinct condition that it is without the State's approval of their folly. The strong desire shown by a certain class of individuals in this community to imitate and emulate their prototypes in ancient Athens in eagerness "to hear and to tell some new thing" needs checking when human life is in the balance as the material upon which the novelty is to be tried as a experiment.

Is it not extraordinary that Massachusetts has always been so ready to legislate in an endless variety of other directions affecting the life and well-being of her population, and is reluctant to interfere with uneducated and unfit practitioners of medicine? The general court has provided for the inspection of nearly everything that enters into domestic administration, and has ordained proper penalties for frauds and adulterations; we have ample protection in the matter of milk and vinegar, chocolate and nails, gas and leather, confections and drugs; but none against the charlatans. Massachusetts licenses her auctioneers and her peddlers, her pilots and publicans, her pawn-brokers and her warehouse-men, her dentists and her druggists; she places even clergymen and lawyers under regulations, but no difference exists in her esteem between the educated physician and the fraudulent healer which an adjacent State has spewed out upon our soil. We have statutes for the protection of lobsters and smelts, rabbits and partridges; but for sick people, the State offers no defence against quackery.

Let not medical men say that it is useless to seek a remedy from the legislature, that charlatanism has become too firmly rooted here to be eradicated by any means, however drastic. Repeatedly it has been demonstrated that measures of reform have been successfully accomplished with the aid of our profession in shaping and guiding legislation. Take a single illustration, the evolution of the methods prescribed for the commitment and treatment of the insane. As late as 1827, an act was passed by the Massachusetts Legislature which included every excited lunatic with "rogues, vagabonds, common beggars, and other idle, disorderly and lewd persons," and provided for his incarceration in a jail or house of correction until he was "restored to his right mind." This barbarity continued until the State, in 1832, heeding the representations of physicians, established the first lunatic hospital at Worcester. For many years after this, the process of commitment continued to be a purely legal one, without any required medical examination. But the protests of physicians again prevailed. In 1844, the legislature passed an act which recognized, for the first time, that insanity was a disease, whose diagnosis re-

quired medical knowledge, rather than legal acuteness. In 1862, it was enacted that for the commitment of an insane person to a lunatic hospital, "the evidence and certificate of at least two respectable physicians" should be required as a preliminary to establish the fact of insanity. Some modifications have been made in the amount and character of the medical evidence in these cases, but the recognition of the true nature of insanity and of the propriety of placing its humane treatment in the hands of physicians, rather than in those of the keepers of jails, was due to the labors of such men as Bell, Wyman, Ray and Jarvis. This result shows the effects which medical men may accomplish at the State-house if only their efforts are rightly directed and persistently exercised. Other examples of this force might be cited. The statutes relating to the public health, to the registration of vital statistics, to compulsory vaccination, to the use of subjects for anatomical study, to the investigation of deaths by violence, are all memorials of the intelligent zeal of medical men in shaping and obtaining wise legislation. What physicians have accomplished in the past is an augury and proof of what they may now accomplish in the attainment of statutory regulation of medical practice. And not in this direction alone. There are other matters wherein wholesome laws are needed. I have only to suggest the desirability of legislation for the more effectual prevention of the spread of contagious diseases, including syphilis; for less barbarous methods in the punishment of convicted murderers; for better dwellings for the poor; for medical inspection of schools; for the compulsory establishment of a local health-board in every town; for reform in the methods of using medical experts. In these, and other similar directions, the educated physicians of Massachusetts have it in their power to bring about salutary changes. It is a power that is not sufficiently appreciated by us, its possessors. It is a power which may find its correct exercise in various ways; in the open and candid expression of opinion as we meet our acquaintances and clients; or in properly formulated memorials to the general court; or in attendance and spoken testimony at hearings before legislative committees; or even in service in the law-making body itself. It is to the credit of our Society that its members have shown their willingness to interrupt their professional labors and to respond to the call of their neighbors to represent them in the legislature. It is an honorable service, and nearly every session has found, included in its rolls, the names of reputable physicians, members of this Society, who have given intelligent and faithful attention to legislative problems, the satisfactory solution of which has been largely due to their wise counsel and to the experienced judgment derived from their medical training.

(To be continued.)

A DISCONTENTED DOCTOR.—The *Berliner Tagblatt* recently contained the following: "I have read with envy and some indignation that the corn porters of Berlin, who are now earning from ten to twelve shillings a day want to strike for higher pay. Would that instead of being a Berlin doctor I had been a corn porter!" The communication was sent to the paper by a young doctor of three years' experience in the profession.

THE PRESIDENT'S ADDRESS BEFORE THE
AMERICAN SURGICAL ASSOCIATION.¹

BY F. S. CONNER, M.D., CINCINNATI, O.

FELLOWS OF THE AMERICAN SURGICAL ASSOCIATION:—After a series of meetings at the national capital, it is fitting that our first journeying should bring us to a city with which is associated so much that is good and great in the history of our country, political, literary, scientific and professional. Here, as a part of the university, that, like Salernum of old is *mater et caput* of the schools, was established the second medical school in the Western Hemisphere, where for more than a century, scientific medicine has been well and thoroughly taught. The Massachusetts General and the City Hospitals have been the theatres of much work that has strongly affected the practice of our art the world over, and one of them will ever be remembered as the place in which "the problem of surgical anesthesia was definitively solved." Their surgeons, learned, skillful, progressive and inventive, by labors and teachings have honored themselves and the profession of which they have been such distinguished members. Not in America only, but everywhere, the profession has held and now holds in high esteem the Medicine and Surgery of Boston.

The active life of the Surgical Association, that begun with the meeting in Philadelphia, embraces a ten-year period than which no other in professional history has been more strongly characterized by extent and accuracy of investigation, by scientific judicious experimentation, by the discovery of important facts, by improvements in the technique of old operations and by the introduction and general adoption of new procedures. In the study of the causes of disease many master minds have been at work, and more positive knowledge has been gained than in all time before, so that in the bacteriological laboratories, a new pathology has been worked out, in large measure revolutionary of both opinion and practice. Speculation and theory have given place to experimentation and fact, and the disease-producing influence of airs, of earths, of waters have been found to lie in organisms that have been seized upon, separated, classified and tested.

We can scarcely realize that it was only in 1882 that the startling announcement was made that tuberculosis was consequent upon the presence and action of a definite micro-organism, that could be isolated, cultivated and inoculated; and that so short a time ago, the doubters were many, more indeed than the believers. In this single decade just passed, the fact has become universally acknowledged, the sceptics are now but professional curiosities; a new literature has been written; even a new language created in which strumous (except as a synonym of tuberculous) has no more place than phlogiston.

The long-known chronic affections of bone, of joints, of glands, of skin, have been shown to be in great measure the result of the presence and action of a bacillus, that everywhere and under all circumstances moves in one and the same way and that a destructive one, though antagonized at every step by healthy tissue (not seldom successfully) and subject more or less completely to the power of our Art, directed to the procuring of the destruction or encapsulation of the germ, the removal of the infected tissues or the

taking away of the affected part. We can understand now why rest is of so much importance, why excision or erosion may be followed as it so often is, by non-recurrence; why on the other hand, in spite of, or even because of operative interference, parts near or remote become secondarily infected.

The most important work, as it seems to me, that has been done in connection with surgical tuberculosis, is that which has had for its object, the finding out and properly applying a therapeutic agent which will destroy the organism and secure its expulsion from the body, or secure such condensation of non-infected tissue about it as shall form a wall around and by encapsulation render it harmless. Far better will it be to administer generally or locally a remedy that will remove the bacillus or make it innocuous than to do the most brilliant operation followed by the most rapid healing and recovery in large measure of functional integrity. The end is far from having been reached, but a long step in advance has been made, and the reviewer of the work of another ten years, may find the result secured and a non-operative, truly curative treatment in use. It is certainly to be hoped, though, that scientific medicine will not again have to pass through such an experience as that of a couple of years ago, the history of which will always be of much interest to the students of psychology and of mental epidemics.

Of the three wound complications which from the earliest times have been the bane of surgery, septic infection, erysipelas and tetanus, the cause of only the first had been determined a decade ago; that of each is now known, and known because of the application to the tissues and fluids of those affected by them of the same methods of bacteriological investigation that had revealed the existence and life history of the pyogenic cocci. In erysipelas have been satisfied the three requirements of proof of bacterial origin, isolation, cultivation and inoculation into the human subject with resulting development of the original disease. Not a few of the long time perplexing questions connected with tetanus have found answer in the discovered identity of its causative organism with the earth bacillus and in the anaerobic nature of it. In every case that has come under my observation, so far as I can now recall, except those associated with toy-pistol wounds, I am able to trace either direct contact with the naked ground, or probable almost unavoidable contamination of the wound with dust and dirt. In the toy-pistol wounds of the hands there is that exclusion of air and retention of fluid that are most favorable to the growth and activity of secretion of an organism that flourishes in the absence of oxygen, an organism that at the time of injury or later was located doubtless upon the dirty hand. Knowledge of the habits of the bacillus is sufficient of itself to indicate the treatment to be pursued, that tetanus may not supervene, to wit, thorough opening up and free drainage of the wound. Further, not only has the causative organism been found, but also it has been shown that there may be developed from it an antitodal chemical agent, the injection of which can produce immunity or act remedially upon a tetanic patient.

It is in the treatment of the diseases and injuries of the viscera and their envelopes that the greatest advances in our art have been made in these later years. Numerous and carefully conducted experiments upon animals and operative procedures upon man, new, bold

¹ Boston, Mass., Tuesday, May 31, 1892.

and highly successful, have again and again been reported, and in the work that has been done, our own Fellows have had no minor part.

The abdominal cavity that for so long a time was an almost sacred territory not to be invaded except under peculiar circumstances and for the relief of a very few morbid conditions, has, because of the secured protection against sepsis, become one of the more common fields of operations, done on account of wounds, of tumors, of obstructions and of infective inflammation. Such operations, not seldom, have been, it may be believed, ill-advised, ill-timed, unnecessary and harmful, entered upon by inexperienced men, whose eagerness to cut has found explanation in the fact that in simple abdominal section few operative difficulties are usually met with and no dangerous hemorrhage is to be expected, the arresting of which might test the knowledge and skill of the operator.

Penetrating and perforating wounds of the hollow and solid viscera are no longer treated solely by opium and ice with a resulting fatality truly appalling, but by section of the wall, suture of the wounds, ligation of the bleeding vessels and antiseptic plugging, if necessary, of openings in the solid organs. The mortality-rate is still unfortunately very high; how high cannot be definitely stated, since the number of reported cases is yet limited and includes without doubt an undue proportion of successful results. Not a few of the deaths, it cannot be doubted, have been due to the delay, the incompleteness and the imperfection of the operation, but many must be credited to the damage primarily done. Made by bullets of other than the smallest calibre, the pistol wound of the stomach, of the intestines, of the mesentery or of the liver, is likely to prove mortal from shock or hemorrhage, even though treated properly and skilfully, and is almost absolutely certain to do so if fecal extravasation has occurred and septic inflammation has set in. It cannot be questioned but that wounds made by very small balls may be, and have been recovered from without operative interference, and there is good reason for believing that in the absence of symptoms of active hemorrhage such wounds will do as well or better without as with laparotomy; an operation, however improved its technique, is still an addition to the risk of the case. It is as unwise as it is untrue to declare that there are no dangers attaching to incision of the abdominal walls and exploration of the intestinal tract. But when it is a bullet of large size that has entered the cavity, the safety of the patient almost certainly lies, if anywhere, in speedy, thorough operation. It is hard to understand such statistics as those of Reclus, in which it would appear that while without operation only thirty-five per cent. died, with operation, the mortality-rate was from seventy-three per cent. to eighty-six per cent. That in three out of four, or six out of seven patients thus wounded, the result was a fatal one may be believed, but that it should be so in only one out of four expectantly treated, is to say the least, very remarkable. Not the smallest of difficulties often associated with these wounds, is the determination of the occurrence of penetration, which at times can only be through opening up and following down of the parietal wound. Inflation of the bowel with hydrogen gas, the earlier experiments with which were so brilliant and so captivating, will not always give the desired information and may be positively detrimental to the best interests of the patient, as it

certainly has been in certain cases already put on record.

The septic inflammations about the head of the colon, originating so generally in the appendix (which some would regard as an "intestinal tonsil," but which may well be looked upon as a useless survival of a once important organ) have in the period under consideration been brought within the province of the surgeon, not as before at a late day when the resulting abscess has fortunately come well forward toward the surface, but at an early stage when by evacuation of the fluid with or without removal of the appendix, relief may be afforded and the patient be protected against the lethal effects of perforative peritonitis or perinephritic suppuration. The cases of acute disturbance in the region of the cæcum due to an overloaded bowel or to the catarrhal inflammation, will find relief in the future as in the past in the therapeutic measures of the physician; but suppurative gangrene producing appendicitis, it has been proven, and that chiefly by the experience of our American surgeons, can with safety be treated only by the knife. Whether or not it is advisable to remove, during a quiescent stage, the appendix that has been the seat of repeated attacks of inflammation, is a question as yet unsettled.

A very cursory examination of the professional literature, home and foreign, for the past decade, would convince any one that an immense amount of work, experimental and operative, has been done in the determination of the proper and most advisable methods of treatment in cases of obstruction, acute and chronic, malignant and non-malignant, located in any part of the tract from the cardiac extremity of the stomach to the lower end of the rectum. Strictures have been dilated, affected areas removed, anastomosis secured, "cut-offs" established, new openings formed, with the result in favorable cases of effecting cure or affording relief. The technique of the older operations has been much improved, modifications have been introduced, and not a few altogether new procedures have been devised, tested and widely accepted.

Pyloric stenosis, for which ten years ago pylorotomy was all that the surgeon could offer, may now, if of non-malignant character, be relieved by digital division through the open stomach, by curetting, by a pyloro-plastic operation, or by gastro-enterostomy; and if due to malignant disease, by the latter operation, in every way to be preferred to excision of the cancerous mass, being speedier and easier of execution and having a mortality-rate but one-half or perhaps only one-fourth as great. In its performance, as in similar operations upon lower portions of the intestine much use has been made of the approximation plates, as of decalcified bones, of leather or of potato, and of cat-gut rings and mats; but at the present time there is certainly a strong and growing feeling that their employment is not only not necessary but rather an injury than a benefit to the patient. It may be well questioned, if after all, viewing the subject in its widest aspect, operations for cancer of the stomach have really been or can be of much service. They certainly have often afforded much temporary relief and are to be resorted to when suffering is great and starvation is imminent; but on the other hand, the prolongation of life when the operation is recovered from is, with only now and then an exception, but slight, excision has almost never protected from recurrence, the abnormal anastomoses are very likely to speedily

become seriously contracted with resulting loss of the benefit primarily secured and the necessitating disease must go on increasing though it may be more slowly than before. In not a few of the reported cases, the condition of the patients at the time of operation was fairly good, the suffering was slight and the general strength but little impaired, yet as the direct result of the surgical interference life was cut short. If we balance these cases against those in which a few weeks or months were gained by excision or anastomosis, it is very questionable if we can find in the result of operation any material addition to the sum total of life.

Malignant disease located in the rectum too low to be removed through an anterior abdominal incision and too high to be thoroughly extirpated through a perineal one, may be reached from behind, after resection of the coccyx, with or without, as necessity may require, that of the lower portion of the sacrum. This new operation, neither specially difficult nor dangerous, may be done in place of a colotomy, lumbar or inguinal, the latter being to-day more generally preferred. The same objection to such radical treatment as compared with palliative, namely, increase of risk without compensating probability of cure, holds good here as at the pylorus, although in less degree.

In no other part of intestinal surgery has more been done in thought, in experiment and practice than in that dealing with excisions of the bowel in continuity, rendered necessary on account of wounds, growths or gangrene. As the technique of the operations has been improved, the time of performance has been lessened, the risk to life diminished and the range of applicability increased. It is still undetermined whether end-to-end or lateral anastomosis is to be preferred, of how much value bone plates or rings, or other like aids really are, to the patient, at least, how far omental grafts may be required, or how much additional security they afford.

The solid organs have again and again been brought under surgical treatment on account of wounds, of growths and of tubercular, parasitic and suppurative diseases. The kidney, spleen and even the pancreas have been removed entire, the liver in part. The gall-bladder has been opened and its contents removed (stones, bile, pus) and later sutured and left in place or stitched to the abdominal wall or cut away altogether. Pancreatic cysts have been at times extirpated, at times drained. These operations have yearly been more frequently performed for more varied causes, by steadily improving methods and with a marked diminution in the resulting fatality.

Special notice cannot be taken of the new and improved operations upon the uterus and its appendages which have had for their object the relief of the distressing and grave conditions, and as their result, preservation of life and restoration to health in large and steadily increasing proportion of the cases treated.

Of the work done upon the bladder much might well be said; but only a passing reference to the high esteem in which, so justly, the suprapubic section is now held; to the greatly improved and more successful treatment of tumors and to the established position that in the period under consideration, litholapaxy has taken as the most generally applicable method of dealing with stone, even in young children, for the relief of whom ten years ago, lithotomy was everywhere regarded as the only operation to be ordinarily thought of.

Though there have been many operations of very considerable extent upon the thoracic wall to secure closure of an empyemic cavity and for the extirpation of tumors, in intra-thoracic surgery but little has been done and that almost entirely in the evacuation of lung abscesses and the removal of hydatid cysts the result in the latter class of cases has been remarkably successful. Pneumonotomy for tubercular abscess, according to the report made to the French Congress of Tuberculosis last year, had relieved in about fifty per cent. of the cases and cured in about one-fourth as many, but the number of patients thus far treated has been so small that the figures are of little importance in the consideration of the advisability or otherwise of active interference. It certainly stands to reason that the opening up and draining of the pulmonary tubercular abscess will not be likely to afford other than temporary relief, such pus collection being commonly not solitary, but one of a number in an extensively diseased organ. In the removal of deeply located foreign bodies and tumors other than those connected with the wall, almost nothing has been attempted, and there are difficulties, anatomical and physiological in the way of such operations, which, if in any given case not insuperable, will probably always tend to make prudent surgeons cautious about entering upon one of them.

Pneumonotomy, experimentally shown to be readily done and attended with no great amount of danger, will doubtless in the future have a place in the treatment of lung injuries, in which already it has been a few times employed, according to one report, in fifteen cases with a death-rate of less than fifteen per cent. That it will ever be an accepted method of treatment for tuberculous lung may well be questioned.

It is in the surgery of the head and spine that the greatest advances have been made, the largest number of new procedures introduced, the most brilliant operations done; and in these regions more than anywhere else the surgery of to day is a new surgery, much of it the growth of even fewer years than those included in the lifetime of the Association. More and more constantly are all depressed fractures of the skull being treated actively, and basal fractures, antiseptically. Stronger and stronger is becoming the conviction of surgeons that fractures of the spine associated with evidence of pressure upon or injury of the cord, should not be left to nature, if the general and local symptoms indicate lesions that can be removed or relieved by elevation or extraction of vertebral fragments, or the lessening of intra-dural tension through opening of the sheath.

It has been proven to be wise to treat bullet wounds of the brain like other punctured wounds of the organ, by exploring, cleaning and draining the track; and occasionally it has been found possible to extract the ball through the wound of entrance or a counter-opening in the skull. The future must determine how far it is wise to go in the way of effecting removal of the bullet, and this must largely depend upon previously ascertained extent of liability to the supervention of epilepsy and mental disturbances, weeks, months or years after the lodgement of a ball which, at the time of injury, did comparatively little damage, or damage, at least, that was spontaneously recovered from.

Trephining for epilepsy following injury of the skull is no new operation, but of late such treatment has been quite largely employed, not only in cases where

there has been an old fracture or contusion, but in those in which by application of the now well-established rules of cerebral localization it has been possible to determine the place of a meningeal thickening or of a limited chronic encephalitis or a new growth, solid or cystic, acting as an exciting cause of motor disturbance. Electrical stimulation of the exposed cortex has been made to indicate with exactness a diseased area, the removal of which has been followed by relief, temporary or permanent, of the spasm symptoms. The attained perfection of operative procedures has reduced the mortality-rate to a very low figure and even the after-presence of a gap in the skull has been prevented by re-implantation of the removed bone. Unfortunately in very many cases of recovery from operation, in a few weeks or months or it may be years, the convulsive seizures will come on again. An established "epileptic habit" is independent of the original lesion, and after a certain time, which is a very uncertain one, the patient can no longer be assured that the cause removed, the effect will cease. But for all this, the morbid condition is so disabling, the relief afforded may be so great, the risk run is comparatively so small, that after proper and properly continued, yet unavailing medicinal treatment, an epileptic in whom the seat of the disease can be fairly well located should become the subject of operative interference.

Trephining has also been done because of the existence of long-standing severe headache; and in cases in which the thorough application of the therapeutic test has proved that the cephalgia does not depend upon a cause that can be reached and removed by drugs, the operation may certainly with propriety be recommended.

Considerable sections of the skull have been taken away to permit of the expansion of the microcephalic brain, but though improvement in mental condition in certain cases has followed such linear craniotomy, at the present time the operation seems to be of very questionable utility. Before it is to be accepted as an advisable method of treating feeble-minded children, further investigation must be made into the causes of arrested cerebral development and how far it is productive of, and how far consequent upon, premature ossification of the cranium.

Insanity of traumatic origin has in a very large proportion of the few cases surgically treated, been much improved or cured, because, we may believe, of relief of "intra-cranial fluid pressure"; and even general paretic have been thought to have been benefited by trephining.

A few years ago, who would have dreamed of opening up the lateral sinus and removing from it a pyogenic thrombus? Yet it has now been done several times, and with success.

In not a few cases intra-cranial abscesses have been definitely located and operatively relieved.

But the most brilliant chapter in this history of brain-surgery in recent times, is that relating to tumors. There is set forth in it not only what has been done, remarkable as it is, but also the unity of medicine and the interdependence of its various departments. It is because of the work of the anatominist, the physiologist, the pathologist, the neurologist, that it has been rendered possible to locate with close approximation to exactness the position of the neoplasm and its character; without knowledge of which the skill of the surgeon and the most careful operative

technique would be of little or no avail. Even the experimental therapist has played a part because of his demonstrations of the influence of morphia upon the intra-cranial circulation. Though in but a small percentage of cases of tumor, has it been or perhaps can it be practicable to effect removal, because of location or pathological character, yet when it is so, the gain is enormous, even though the relief afforded be but temporary, as in dealing with certain growths it must be.

Much less operative work has been done upon the spine than upon the head. It has had for its object the evacuation of abscesses, the relief of paralysis and the removal of tumors pressing upon the cord, and has been in a high degree satisfactory and full of promise.

As never before, the congenital malformations, meningomyelocele, encephalocele and spina bifida have been subjected to surgical treatment, and that with an increasing success, as improvements have been made in the methods of execution. Renewed attempts have been made to permanently get rid of intra-ventricular effusions by tapping and drainage, but the results have not been what might be desired, and that, whether the old route to the ventricle has been followed, or the new lateral one.

In the special departments, as in general surgery, these last ten years have been busy ones, and each may justly claim that there has been advance made in the recognition of disease and improvement in its treatment. But consideration of the work done in them does not concern us here.

Any retrospect, be it never so hurried, of the work of the decade, furnishes good warrant for pride in what has been, and high hopes of what is to be. The world over, educated minds and trained hands are busy with the problems of cause, of course, of termination, and seeking out surer, safer, and speedier means of relief, therapeutic and operative. Week by week, and month by month, what is accomplished becomes tree and common property; everything is proven, and the good held fast. What will be the outcome of all this thinking and experimenting, and operating and writing, even in the near future, who would dare to predict? American surgeons have had not a little to do with the work in the past; Fellows of our own Association, some of whom have fallen asleep, have been closely identified with the discovery, the early adoption and the thorough testing of not a few methods of treatment; and we may expect with confidence that it will be with us hereafter as it has been, and yet more so.

As an organized body, certain duties rest upon the Association. Representing the surgery of a country of wide extent and of very varied climate and soil, of a people of many racial origins, there should be conducted by it a series of collective investigations, which, for example, might show the prevalence, and as far as possible, the more remote determining causes of certain surgical diseases, chief among which is cancer; or the influence of the local conditions, as of altitude, of average temperature, and of moisture upon the healing of wounds; or of the relative resisting-power to the action of morbid organisms of the descendants of immigrants from different nations, still more of members of the several color races; four of which are to be met with within our boundary lines in numbers large enough to be of value in an investigation of this sort. From our meetings, year by year, should go out

to the world, reports, as it were, of the surgical state of the nation, and, as far as can be ascertained, the reasons therefore as found in place, in race, in occupation and in social position.

In the *personnel* of the Association, the years that have gone by have brought much change. It could not but be so. Thirty-three of the Fellows have passed away, leaving to us a memory of worth, of learning and of skill. Since our last meeting Agnew, and Campbell, and Johnston, and Kinloch, and Peck have rested from their labors. Each, honorable and honored; in his own place and in his own way, aided humanity and advanced medicine, and each will long be held by us in kind remembrance.

ABSTRACT OF THE PRESIDENT'S ADDRESS BEFORE THE ASSOCIATION OF AMERICAN PHYSICIANS.¹

BY HENRY M. LYMAN, M.D., CHICAGO, ILL.

REFERENCE was made to the absence of the Secretary, Dr. Hun, who "obedient to the higher impulses of his being, has taken unto himself a wife, and departed for the happy hunting grounds of European seclusion."

Since the last meeting, death has removed two of the members of the Association, Dr. Francis Donaldson died in Baltimore, Md., after a period of declining health, which was suddenly terminated by heart failure on the morning of December 9, 1891. He had reached the age of sixty-eight years. The story of his life covers everything of interest pertaining to medicine in his native city during the past half-century. He was a graduate of the University of Maryland; afterwards studied in Paris. From 1863 to 1866, he was Professor of *Materia Medica* in the Maryland College of Pharmacy, and later Professor of Physiology and Hygiene, and Clinical Professor of Diseases of the Throat and Chest in the University of Maryland. He was a frequent contributor to medical periodicals and an accomplished teacher. He was one of the consulting staff of the Johns Hopkins Hospital. He was one of the finest types of the energetic, accomplished and thoughtful men who adorned the last generation of American physicians.

Dr. Henry Ingersoll Bowditch died in the city of Boston, January 14, 1892, in the eighty-fourth year of his age. He was a son of the celebrated mathematician, Nathaniel Bowditch. As a schoolboy and student, he was remarkable for all the best characteristics, physical, mental and moral of a New England youth of his day. He graduated from Harvard in 1828, entered the medical school in Boston, and received the degree of M.D., in 1832. He spent nearly two years under the instruction of the famous French teachers, Andral, Chomel and Louis. From these eminent pioneers of modern medical science, he acquired the rudiments of that power of acute observation and accurate inference that was so conspicuous a feature of his after-life. From the year 1838 until the close of his active career, he was intimately connected with the Massachusetts General Hospital, the Boston City Hospital, the Carney and New England Hospitals in the city of his residence. He was one of the earliest and most prominent advocates of sanitary science and pub-

lic sanitation; and after the creation in Massachusetts of the first State Board of Health ever known in this country, he devoted ten of the best years of his life to the arduous labors of its presidency. As a man, as a citizen, as a physician, no purer, brighter, nobler spirit has ever adorned the medical profession.

The past year has not been particularly fruitful in brilliant discoveries within the field of medicine. Medical progress can advance only as the allied sciences pave the way by discoveries that can be utilized for the explanation of physiological and pathological phenomena, thus rendering possible new investigations in therapeutics. For these reasons, it is highly important that we should carefully follow the course of research in all departments of scientific investigation.

During the past year, a number of beliefs that were previously held upon hypothetical grounds have been subjected to the final test of experimental evidence, thus enlarging the field in which the uniform operation of the laws of physics and chemistry has been demonstrated.

Brief reference was made to the fascinating researches in the realm of astronomy which have been so recently accomplished by the aid of photography and the spectroscope. To us the principal interest lies in a demonstration thus afforded of the unity of type and method in all the cosmic movements of matter, enabling us to read in the language of the stars the past history and the future course not only of our own solar system but of the planet upon which we dwell.

Experiments in electricity by Professor Hertz, of Karlsruhe, have continued to bear fruit during the past year. It may be now assumed as experimentally demonstrated that electricity, as well as light and heat, are what they have been long supposed to be, modes of motion in an all-pervasive ether. By this demonstration we are brought one step nearer towards the complete definition of the antithesis between mind and matter.

Among the biologists during the past year, research has been particularly occupied with the investigation of the elementary composition and attributes of protoplasm. In connection with the questions that bear upon the subject of heredity, many interesting observations have been published: the investigations of Strasburger, Fleming, Guignard and Fol have thrown new light upon the phenomena of fecundation and reproduction, giving reason to hope that in no very distant future the problems of heredity may receive a satisfactory solution.

Another important question regarding the ultimate organization of protoplasm itself is gradually approaching its solution. Two rival hypotheses at present occupy the field: Altman, Straus and Vogt are of the opinion that a cell-protoplasm is to be considered as an aggregation of co-ordinated elementary organisms that bear to the animal or vegetable cell a relation not unlike that of independent microbes. The bearings of such speculations upon the facts of infection and of fecundation is quite obvious. On the other hand, Butschli maintains that it is entirely unnecessary to assume the existence of any special co-ordinating force, and is of the opinion that all the phenomena which are exhibited by protoplasm may be produced by the operation of ordinary chemical and physical forces.

The past year has been distinguished by the completion of a new edition of Eichhorst's great work on "Internal Medicine," and by the appearance of the

¹ Washington, D. C., Tuesday, May 24, 1892.

first two volumes of the French "Traité de Médecine." In our own country Osler has laid upon us all a debt of gratitude for his admirable volume on the "Practice of Medicine."

These epoch-making achievements indicate the complete recuperation of the French school of medicine from the stunning shock of the Franco-Prussian War. The consecutive volumes of Eichhorst remind one of the German infantry, ponderous, thoroughly trained and invincible, but war-worn and weather-stained to the last degree. Turning from those serried ranks to the French side of the line, we find all the pomp and circumstance of war, all the glitter of gold, the splendor of apparel, the *élan* and *esprit* that have always characterized the French nation. Judging from the already published volumes the new "Traité de Médecine" will be, when completed, the most valuable contribution to the literature of internal medicine that has yet been produced. The world, certainly, cannot yet dispense with the services of the French any more than it can do without the Germans.

Original Article.

RECENT ADDED FACILITIES FOR THE EXAMINATION OF THE EYE.

BY HASKET DERBY, M.D.

- I. THE OPHTHALMOMETER OF JAVAL-SCHIÖTZ. — II. THE PHOTOMETER OF STEVENS. — III. THE ARC-LIGHT ADAPTED FOR THE OPHTHALMOSCOPE.

I. THE OPHTHALMOMETER OF JAVAL-SCHIÖTZ.

IT needs not the memory of a veteran in the practice of ophthalmic surgery to recall the time when patients who supposed they might need the aid of glasses were advised in the text-books to consult some reliable optician. And even after the publication of the classic articles of Donders on refraction and the selection of spectacles, the boxes of trial lenses for years contained no cylindrical glasses. After the latter had been finally introduced, at no very remote epoch, the present writer can remember trying to convince M. Nachet of the desirability of having a double row of cylindrical, just as of spherical, lenses; and insisting on having his own box constructed with this addition, much to the surprise of the optician. Von Graefe wrote his first article on muscular asthenopia in 1862. At the present time there is no case exhibiting asthenopic symptoms in which the thought of abnormal astigmatism, as well as of a want of proper balance in the motor apparatus of the eyes does not occur to us. And a daily increasing number of cases come from the general practitioner to be examined for the possible existence of these defects.

A thorough functional examination of the eyes has therefore become a long and laborious process. It is not sufficient to ascertain the amount of vision, and, if it seems imperfect, to bring it up to the normal standard by the employment of the ordinary spherical lenses. Small degrees of astigmatism must be carefully looked for, and in cases where frequent headaches occur, or the continuous use of the eyes on near objects is attended with difficulty, their complete neutralization is to be undertaken. Muscular insufficiencies are also to be considered, those not only of the internal recti, formerly thought to be the most frequent, but also of

the externi, as well as of the superior and inferior straight muscles. The ophthalmoscope must of course play its part and thoroughly search the interior of the eye. With the means of examination formerly at our command, such a complete investigation of a single case might well extend over several visits, be fatiguing both to patient and surgeon, and involve the use of atropine or homatropine to paralyze the accommodation, thus involving a tedious delay and disabling the individual for a length of time that many an active worker could ill afford.

Fortunately for the public, as well as the profession, science has placed at our command the means of materially shortening these examinations, while the accuracy of the results obtained are in nowise diminished. With the improved Ophthalmometer of Javal-Schiötz, for the investigation of astigmatism, the Photometer of Stevens for gauging the strength and condition of the muscular apparatus, and the Arc-light, made comparatively portable and adapted for use in the ophthalmoscopic closet, the comfort and time of patient and surgeon are no longer unduly encroached upon. Within the limits of a single and comparatively brief visit a thorough examination of the functions can be made, the state of the refraction being sufficiently ascertained without the use of atropine, the muscular equilibrium or want of equilibrium estimated, and a view obtained of the interior of the eye that, for clearness of detail and purity of tint, was rarely approached in the days when our only means of illumination was the flame afforded by oil or gas. It is to briefly call attention to these three improvements in our means of examination that the present article is written.

Of all devices hitherto furnished for the purpose of ascertaining the existence of abnormal astigmatism, none compare with the ophthalmometer of Javal-Schiötz, and I refer particularly to the model of 1889, with the Edison incandescent lamp attachment. This apparatus, as is well known, consists of a metal disc 640 millimetres in diameter, fenestrated in each lower quadrant for the passage of the hand. On it are painted in black and white concentric circles, and its periphery is marked off at intervals of 15 degrees, the figures being reversed that their reflection on the cornea may be more readily made out. The disc is mounted on a tripod, sliding in brass grooves along an horizontal stand, to the opposite extremity of which is attached at right angles an upright frame for the face of the patient, consisting of a sliding chin and fixed forehead rest, the latter having a lamp connected with either corner. Through the centre of the disc passes a small telescope, itself fixed in the centre of a movable curved bar or arc, and by rotating the tube this bar moves over the anterior face of the disc. A long pointer, attached at right angles to the centre of this arc, and a shorter one at each extremity indicate its position. On the arc slide two small parallelograms (or "mires" as they are termed), one with straight, the other with notched edges, each traversed by a straight line drawn across its centre, the two lines forming but a single one when the mires are in apposition. In the body of the telescope is placed a Nicol's prism, which doubles the reflections of the mires on the cornea of the patient. At the back of the tripod supporting disc and telescope is a large screw, the turning of which tilts the apparatus forward or backward and thus changes the inclination of the telescope.

The electric lights are 16 candle power each and

are furnished with reflectors which aid in the illumination of the disc and mires.

The patient's head being placed in position and the eye that is not under examination covered, the observer takes his place at the eye-piece of the telescope, directs it toward the cornea by lateral movements with the hand and vertical with the screw, brings thus the cornea into the field, and alternately pushes forward or withdraws the tripod until a clear image of the disc is obtained on the corneal surface. Disregarding the lateral images of the mires the central ones are brought into contact by passing the hand through the opening in the disc and sliding one mire along the arc. If now one of the cross lines is on a different level from the other the tube of the telescope is grasped and revolved slightly until the lines are continuous, the angle being noted on the small reflected image. The arc is now swept over 90 degrees until the small pointer is in the position that the long one previously occupied. Should the one mire appear to have moved to some extent over the face of the other, and to show white against it, there is astigmatism, each notch that has so impinged giving an astigmatism of one dioptre, while the position of the meridian is shown by the pointers. If the mires in the second position should separate there is astigmatism "against the rule," the extent of the separation indicating its amount.

The advantages of this method of examining for astigmatism are evident. A comparatively short time is occupied. The testing is wholly objective, the judgment of the patient not being appealed to. All he has to do is to keep still and to look in one direction. In ordinary cases, no mydriatic need be used. This last advantage can scarcely be overestimated. For the average individual dreads the artificial dilatation of the pupil. If homatropine be used for this purpose he must sit for hours, applying it at short intervals, and subsequently submit to a partial deprivation of useful vision for a day or more. If atropine be the agent chosen, the time needed for its application is less, but the effect remains for a week or more. A subsequent affection of the eye is often attributed by the ignorant to the use of the drug. It is with difficulty that we persuade many to undergo a second similar examination. It is a well-known fact that the fear of the process deters not a few from submitting to the test. It may be objected that, although the ophthalmometer gives us the astigmatism, we cannot yet ascertain the total hypermetropia without paralyzing the accommodation. Admitting this fact, I would ask why it is so necessary to inquire into the amount of this error of refraction that may be latent. We have already seen that we can find out the astigmatism, the manifest hypermetropia is easily corrected, and it rarely happens that more is desirable. I cannot but agree with Roos as to the frequent occurrence of a hypermetropia that needs no correction, it being a normal condition of the eye, and coincide with him in the belief that there is a very large proportion of cases of asthenopia cured by the simple neutralization of the astigmatism.

I do not wish to be understood as claiming that the ophthalmometer is a perfect instrument and never disappoints the observer. It does not give us the astigmatism of the lens, a factor, however, that it is not ordinarily necessary to regard. It gives the gross amount of the astigmatism but not its kind, this must be subsequently ascertained. Its accuracy on the other hand is often remarkable. It may be likened to a

guide who tells us which one of several roads we are to take, and accompanies us a portion of the way. The aid it affords may not be always perfect, but it is most valuable, while the economy in time is great. This latter consideration is especially felt when the needs of a large clinic are taken into account. At the Eye Infirmary in this city we find it difficult to realize how we got through our work before we possessed an ophthalmometer.

II. THE PHOROMETER OF STEVENS.

That muscular asthenopia exists, that its situation and amount may by proper investigation be ascertained, and that it may be relieved by either prismatic glasses, or by partial or entire tenotomy of the antagonist muscle, would seem to admit of neither doubt nor denial. And yet on this point controversy has long been active. There are those who would relieve many cases of ordinary headache, chorea, and epilepsy by one or repeated operations on the recti muscles. Led by some success in this direction the enthusiasm concerning this method of treatment has gone to yet greater lengths. It is within the personal knowledge of the writer that an internal rectus has been divided for chronic constipation, while in another instance a rheumatic affection of one shoulder was treated by the partial tenotomy of the superior rectus muscle of the corresponding eye.

As may well be supposed a reaction in the opposite direction has taken place. Melancholy results of misdirected zeal for ocular tenotomy, the artificial insufficiencies and persistent diplopia that have resulted from a faulty diagnosis or want of care in the choice of proper cases, have induced many to deny the usefulness of aiding or attacking the motor apparatus of the eye. The medical pendulum ever swings from side to side and is rarely arrested midway.

While we cannot all agree with Dr. George T. Stevens in the extent to which he has pushed his theories, we must respect the sincerity of his convictions. And I think it should be agreed that he has not only devised the most delicate and perfect instruments for operations on the ocular muscles, instruments by the side of which those we have previously possessed appear rude and clumsy, but that he has given us in the phorometer an apparatus for the ready estimation of muscular insufficiencies that ensures accuracy, saves time and trouble, and bears the same relation to this field of investigation that the ophthalmometer does to astigmatism.

An upright column, the length of which may be varied, is inserted in a firm and loaded base, and has hinged to its upper extremity an arm that may be extended at right angles, and, by means of a screw be readily brought into horizontal position, the accuracy of which is at once shown by a spirit level attached to its extremity. On the extended arm is placed a rectangular slide with a broad base, enabling it to stand upright. In this slide are two square apertures, so situated that the patient looks through each with a single eye. Into each aperture is fitted a revolving disc in which is placed a prism of five degrees, the discs having toothed edges and being so connected with each other by a smaller disc that the motion of one is transmitted to the other. By raising a small lever attached to the right-hand disc into a vertical position the prisms are brought base to base. A patient whose head is six or eight inches away sees two images of

a candle at the other end of the room. According as these images are on the same or different levels the relative strength or weakness of the superior and inferior ocular muscles is ascertained; when the level is different a slight movement of the lever to the right or left makes the images even, and the strength of the prism that would be required in order to effect the same result is read off on an arc traversed by a little pointer attached to the centre of the right-hand prism. To test now the lateral muscles the lever is swept round into a horizontal position, thus bringing the base of the right prism up, that of the left down. The double images are now superposed. If out of line, the lever is raised or lowered till they come into line, and the excursion over a graduated arc of the pointer attached to the prism on the left shows the strength of the prism required to neutralize the weakness of the lateral muscles, as well as the position of the muscles requiring aid.

Those who have frequently had occasion to test for muscular insufficiency will appreciate the advantage of this ingenious apparatus. The patient's head is comparatively free, he wears no heavy frame, and need not be tested with a succession of single prisms, losing during the change to a new one the memory of the effect produced by its predecessor. Time, trouble and fatigue are alike spared. It is especially in hospital practice, where a large number of patients, often of limited intelligence, have to be examined in a given time, that the advantages of the phorometer, as of the ophthalmometer, are most gratefully appreciated.

III. THE ARC-LIGHT ADAPTED FOR THE OPHTHALMOSCOPE.

It is remarkable how little stress is laid by authors on the kind of light that is to be used for purposes of ophthalmoscopic examination. "The flame of a well-burning lamp" is all that is ordinarily specified. And I presume that the most of the profession regard the Argand burner as offering the best form of the flame, and gas, under ordinary circumstances, as the best source of illumination. Sunlight is spoken of as having been occasionally employed, but its use is often impossible and generally impracticable. He who has once been able to command a room darkened by shutters, with a round aperture in one of them, and who waiting for a suitable day has reflected from his mirror into the eye of the patient the light furnished by the surface of a white cloud, has seen the fundus illuminated with a clearness and purity of color he had never before witnessed, and has ever after longed to be able to dispense with the yellow glare of the ordinary gas flame, even though passing through a chimney of blue glass.

During the past winter I have been experimenting with the electric light. The incandescent lamp, to which I first directed my attention, was soon found to be impracticable. The outlines of the glowing loop of carbon were reflected on the interior of the eye, giving only linear illumination and leaving the territory between and around their borders in comparative darkness. Increasing the amount of candle power and shielding the flame by means of a frosted globe lessened, but by no means obviated the evil. I then secured a small arc-light, which has proved most satisfactory. As private houses with us are rarely furnished with other than the incandescent circuit, it became necessary to utilize this. The lamp constructed

uses five ampères of current and produces 500 candle power, when burning an arc of forty-five volts. A special carbon is used to give the proper quality and color of light. A resistance coil, placed in circuit with the lamp and connected with it by a flexible cord, takes up the balance of the voltage. The lamp is held on a metal base which carries an upright on which is mounted the apparatus for adjusting the carbons and feeding them toward each other. This upright is provided with a shield, at one end of which is a slide in which ground-glass may be inserted for the purpose of toning the light.

The lamp may be connected with any incandescent circuit, it and its resistance being placed in the branch with a five-ampère switch. The branch on which it is placed should have a carrying power of six ampères. The lamp I am at present using occupies a space of about six by nine inches. Its conductor being flexible it can be readily moved about the table. The aperture in the shield is an inch and a half in diameter. Through this shines a brilliant and steady light that readily adapts itself to the needs of the observer. He can employ it for oblique illumination, use it with the mirror alone for testing the transparency of the media or for retinoscopy, or apply it to the examination of the fundus in either the direct or inverted image.

Despite the character of this light, I find no unpleasant effect complained of by the patient. No complaint of dazzling has been made, and no greater inconvenience caused than would have been the case with the Argand gas-burner. I have no hesitation in stating that I find the light the best I have ever used. The color of the fundus approaches more nearly to that obtained under exceptionally favorable circumstances by day. The definition is greatly improved, being clearer than that obtained with any other form of artificial illumination. Repeated comparisons instituted between the Goddard gas-burner I have had in use for more than twenty years and the arc-light show the superiority of the latter. This has proved to be particularly the case in certain forms of slight macular disorganization I have lately had the opportunity of examining. The careful and repeated scrutiny required when gas was used yielded to the certainty afforded by a single glance aided by the electric lamp. Slight haziness of the vitreous, as well as floating bodies and membranes in this portion of the eye, assume unusual distinctness.

I cannot but think that when the arc-light has been perfected for this purpose it will supersede all lamps now in use. The reason for giving no drawings or additional details of the lamp I am at present using is, that we are now endeavoring to effect improvements in its construction. It is a distinct advance on its predecessor, and specifications for a third are now being worked out. I trust to have a good working lamp to exhibit at the meeting of the American Ophthalmological Society next July, and to be then able to refer those who may desire to obtain it, to the manufacturer.

THE GRADY HOSPITAL IN ATLANTA.—This hospital which was erected as a memorial to Henry W. Grady, was opened in Atlanta, Georgia, last week. The city appropriated \$15,000, the rest was raised by private subscription.

Clinical Department.**CASE OF OVARIOTOMY.¹**

BY GEORGE W. DAVIS, M.D., OF HOLYOKE.

MRS. C., widow, aged sixty-seven, has been in feeble health for many years, still able to be about and attend to her light house-work; has a chronic cough which has been quite constant for many years, worse at night rendering sleep in the dorsal position impossible. Examination failed to discover any organic disease of the lungs or other vital organs.

During the early part of the last winter she was troubled with vesical irritation and pressure about the bladder, which was in a measure relieved by medicines and drinks usually used for such symptoms. About January 1, 1892, she noticed that the lower portion of her abdomen was somewhat full, but did not consider it unnatural.

March 10, 1892, she was examined by Dr. Ellis M. Davis, who discovered an abdominal tumor, and asked me to see the case the next day. I then found a tumor in hypogastric region, well marked, slightly to right of median line, reaching two-thirds of the distance from symphysis to umbilicus, movable, of a semi-solid feel, and fluctuation doubtful. Vaginal examination revealed the pelvic brim filled with what felt to the examining finger as a solid mass with the cervix-uteri behind it and very intimately connected with it. A uterine probe entered one inch and a half. I could not at this examination become satisfied as to whether the solid mass was a uterine growth or an ovarian tumor wedged into the pelvic brim in front of the uterus.

At an examination one week later, the bowels having been thoroughly cleaned out by cathartic medicines, it was found that the tumor had escaped from the pelvis and occupied more space in the abdominal cavity, reaching nearly to the umbilicus. There was a cyst sufficient to give fluctuation in the flank and render the diagnosis confusing; fluctuation in the tumor was doubtful. A digital examination at this time proved that the mass together with the uterus had ascended into a more elevated and roomy position and the cervix was more nearly in its usual place. The uterine sound entered one inch and a half, and the uterus seemed to be more movable upon the sound than would be possible were the tumor uterine. I was also able at this time to get slight motion of the solid mass while the cervix uteri seemed to be stationary. Diagnosis was ovarian cyst, possibly uterine fibro-cyst. From this time on to date of operation, April 8th, the tumor increased in size, very rapidly extending two fingers breadth above the umbilicus and becoming very prominent in front.

Because of the patient's age, chronic cough, and general feebleness, chloroform was selected as the anesthetic. Its administration was entrusted to Dr. J. C. Hubbard. One ounce of brandy was given a few minutes before. During the operation, which lasted forty minutes, the doctor found it necessary to inject brandy hypodermically the pulse having ceased to be perceptible; vomiting and straining was marked, necessitating some delay in operating as the intestines were at times forced through the wound so as to render proper manipulation for the moment impossible.

The patient was operated upon in her own home, Drs. E. M. Davis and G. L. Taylor assisting. A bedroom leading off from the patient's sleeping apartment was cleared of all furniture, including carpet and curtains, thoroughly cleaned and aired and wiped with antiseptic solution as was all the furniture needed at the operation. A new tin wash-boiler was secured for boiling the water to be used in the operation and new earthen pitchers for the various solutions. Everything possible was done to make the patient and surroundings aseptic; and I doubt not with better success than is often the case in well-regulated hospitals.

The patient having been prepared and chloroformed, was placed upon a table in a good light, well covered with blankets, over which were placed such pieces of oiled cloth as would protect her from the liability of getting wet, with a hot-water bag at her feet; the seat of operation was surrounded with towels wet in warm sublimate solution. An incision three inches long, midway between umbilicus and symphysis through the linea alba to the peritoneum, was made, the peritoneum was picked up with dissecting forceps and nicked with scalpel, then slit upon the finger as a director to the same length as the integumentary incision. The cyst now came into view, and presented an unusually dark color, making a marked contrast with its present pearly-white appearance. This was caused by the dark brownish-green color of the cyst fluid. It very closely resembled a cyst filled with blood. The sack contained the so-called colloid fluid, portions of it being quite quick. After searching for attachments with the fingers, the hand being introduced for the purpose, the cyst was punctured with Tait's trocar, but its blunt point tore a hole too large to be easily managed with the trocar in position, and to prevent the fluid from flowing into the abdominal cavity, the trocar was laid aside, the edge of the sack quickly seized with Nelaton's cyst-forceps and drawn through the incision, allowing its contents to escape outside, it, at the same time, filled the opening in the abdominal wall, preventing protrusion of the intestines. The largest cyst having been nearly emptied, the opening in its wall was clamped with a large T-shaped cyst-forceps to still further lessen the liability of the cyst fluid entering the abdominal cavity. The cyst was now found to be multilocular, there still remaining another cyst which seemed independent of the first; it was as large as could be delivered through the abdominal wound without rupture. It was slowly lifted out of the abdominal cavity together with the solid portion of the tumor. The pedicle was very short and three inches broad, but not thick. It was so short as to make ligation difficult. It was ligated with silk ligature and tied with the Staffordshire knot and severed with scissors. There was very little hemorrhage. The toilet of peritoneum was done. A large flat sponge, moist with weak, warm, sublimate solution, was introduced so as to prevent the intestines from injury during the closure of the abdominal wound. Catgut sutures were used for this purpose. The wound was dressed with borated cotton, on which was smeared the following ointment: iodoform, one-half drachm; boracic acid, one drachm; sub-nitrate of bismuth, two drachms; vaseline, one ounce. Before tightening and tying the sutures, a glass drainage-tube was introduced and so placed behind the uterus as to drain that portion of the pelvis into which the pedicle had dropped. The omentum was carefully brought

¹ Read before the Annual Meeting of the Massachusetts Medical Society (Hampden District) April 20, 1892.

down in front and around the tube. The tube used seems to be a modification of Well's glass drainage-tube, the lower end being slightly curved and closed, but many perforations are found in its lower extremity. These perforations are larger than those in Well's tube, and I think they are too large as the tissues found their way into them, necessitating the use of some force in the removal of the tube. This gave the patient some pain, and must have disturbed the quietude of the parts surrounding its lower extremity in the immediate vicinity of the pedicle. The tube was removed thirty hours after the operation, and had been turned partly around and withdrawn to the extent of one inch at a previous cleaning. The manner of dressing the drainage-tube is important, and in this case the method adopted by Price was used. The tube having been placed in the lower angle of the wound with the flange which is three-fourths of an inch from the outer end resting upon the skin. The dressings were applied to the wound and carried a little distance below it towards the symphysis but leaving the end of the tube projecting through them. The five-tailed flannel binder was then applied; the tube still projecting through it. A piece of rubber dam about fourteen inches square was slipped over the end of tube and spread out upon the binder. Borated absorbent cotton with iodoform sprinkled upon it was used to cover the tube and absorb the discharge. The corners of the dam were turned up over the pile of cotton and pinned in such a way as to exclude the air; enclosing the cotton as it were in a rubber bag. Then to aid in keeping this bag of cotton in position another light binder was carried around the patient and over the bag of cotton. This might have been carried only from side to side of patient and secured to the flannel binder with safety-pins. The operation was now finished and the patient was quickly conveyed to her bed which had been supplied with hot blankets and heaters. She vomited several times, had hiccup and appeared severely shocked. Pulse was very slow, only about fifty beats per minute. She was kept very quiet with head low and she slowly reacted as the chloroform narcosis passed off.

The discharge through the drainage-tube was very moderate for the first six hours, after which it was never enough to fill the tube and color the cotton. The tube was however emptied several times of a little colored serum, but at the time of its removal the little serum found in it was clear. After the tube was removed a stitch was inserted and the dressing which had been slightly soiled from oozing by the side of the tube was removed and a new one secured in position by strapping. The binder was continued as before. The wound was in good condition.

The highest temperature recorded during the first week after operation was 99.4, while the pulse remained constantly at or below 70. The bowels were moved the fourth day with an enema; but, as its effect was slight, Rochelle salts were given which produced free catharsis; since which time the bowels have been sufficiently moved by an occasional injection of soap and water.

She has had no cough. The stitches were removed the eighth day. Patient was somewhat nervous that day and the evening temperature rose to 100.5° with a pulse of 76. She was allowed to swallow absolutely nothing for the first twenty-four hours after operation, and only tablespoonful doses of gruel, milk and beef

tea for the next two or three days; since which time the dietary has been gradually increased, and at present she takes ordinary food. There has been no tympanites and the abdomen has been perfectly flat since the operation. We have every reason to expect a perfect recovery. The patient sat up upon the sixteenth day and upon each succeeding day thereafter, and now, May 9th, is entirely well.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

(Continued from No. 22, page 553.)

ALKALIES IN UNIVERSAL PRURITUS.

LANGE has found that sodium bicarbonate and lithium carbonate, combined with carbolic acid compresses, have a very prompt effect in relieving universal pruritus. He refers to an extreme case in which the condition was improved in a few days, with marked relief in six weeks, and in three months hypnotics were unnecessary.

BENZINE IN PEDICULOSIS.³

Nedzwiecki strongly recommends ordinary commercial benzine as the most effective, cleanly, and convenient application for destroying pediculi capitis or pubis. The affected parts should be freely bathed with the fluid for three or four minutes. Both pediculi and nits are killed almost instantaneously. As a rule a single application is sufficient, even in severe cases.

The smell of benzine is said to disappear very quickly. The remedy can be safely applied, even in the presence of an eczematous rash, since it causes only trifling pain, which soon passes off. The treatment must always be carried out in the daytime, as the substance is extremely inflammable.

THE TOXIC EFFECTS OF CHLORATE OF POTASSIUM.⁴

Dr. G. A. Fackler reports in the *Cincinnati Lancet-Clinic*, the case of a boy, fifteen years old, who had taken one hundred and fifty grains of chlorate of potassium in a period of six hours. The most striking feature was a slight bluish discoloration of the skin, especially marked about the lips, nose, ears and extremities. There was a slightly jaundiced appearance of the conjunctiva, abdominal walls not distended but painful on pressure, liver decidedly enlarged. During the examination the patient began to vomit, excruciating pain in the lumbar region followed and the patient lay moaning, retching, vomiting, and, with the peculiarly discolored skin, presented a rather harrowing picture. The urine was voided with marked strangury and sparingly, and upon examination was of a peculiarly yellowish-red color and found to contain albumen.

Sulphate of magnesia was administered and four hours subsequently the patient had profuse alvine discharges, slight dyspepsia was present, and there were a number of yellowish-brown maculae upon the side of the abdomen, the back, and anterior portion of the neck: acetate of potassium with tincture of strophantus was ordered. The symptoms gradually improved, and within five days had entirely disappeared, with the exception of slight pain in the epigastrium.

³ British Medical Journal, January 2, 1892.

⁴ Archives of Pediatrics, No. 33, 1891.

The best therapy for the future is to banish the remedy from our list of medicines, although it must be granted that in cases of throat affections and cystitis occasionally good results are witnessed, still, these results are wanting in a disproportionately larger number of cases. On the other hand, we have at our disposal a large number of substances which in their therapeutic value are not inferior to chlorate of potassium and do not possess much toxic properties. It is especially advisable never to employ it as a medicine for children.

Poisoning by Gelsemium Sempervirens.⁵

Dr. Jepson was called upon to treat a woman, aged forty, who was suffering from neuralgia in both temples. He gave her tincture of gelsemium in ten-minim doses every two or three hours; and as no relief had been obtained after one day, he ordered double doses in a quinine mixture. She took three or four doses during the night. Next morning at eight o'clock she seemed better, but an hour later she was found in a very peculiar state. Though perfectly conscious, she had lost power over her tongue: could not protrude it, could not articulate, could only swallow with very great difficulty. Her pupils were widely dilated, and she could not see clearly. She could not write, but nodded in reply in questions. A hypodermic injection of strychnine (grain $\frac{1}{2}$) was given with excellent results. Ten minutes after it there was a return of power in the tongue and hands, and an improvement in the vision. After a second injection there was still further improvement; she took food and stimulants; and all paroxysms disappeared. She had some return of the neuralgia and was very weak for a few days, but eventually quite recovered and enjoyed better health than for some time previously.

PENTAL, A NEW ANESTHETIC.⁶

Pental is a clear, colorless, thin, neutral, unirritating, fluid, with a peculiar sweetish odor and taste. It is more inflammable than chloroform. It has been found to have a distinct anesthetic action without unpleasant after-effects. The narcosis is not as profound as with chloroform, but it is sufficiently deep for the smaller and also larger surgical operations. Patients come readily under its influence in about four minutes and its use is seldom accompanied by the unpleasant features of anesthesia by means of chloroform. Out of 120 administrations of the drug there were serious though not fatal symptoms in one case. The drug was administered in an inhaler a few drops at a time, and every precaution used with chloroform was taken, narcosis was continued from forty seconds to eight and one-half minutes. It seems possible that this anesthetic may find a place in practice, but a proper estimate of its value can only be made after it has been used in a larger number of cases.

CHLORALAMIDE.⁷

Professor H. C. Wood and Dr. David Cerna have studied the physiological action of chloralamide and the results of their experiments indicate that the action of this drug upon the heart is so slight that it bids fair to be valuable as a hypnotic in cases of feeble heart; while its stimulating influence upon the respiration would seem to fit it for employment in cases of nervous

exhaustion. The exact clinical value of a hypnotic can, however, only be determined by clinical study. After the use of it to a moderate extent, in various forms of insomnia, Dr. Wood considers it to be slower and less certain in its action than chloral. Rarely have unpleasant after-effects been noted, but he has seen in some cases distinct headache. It has been recommended by Hagen and Hüffer as of especial value in cardiac asthma.

LAVAGE.⁸

In the *Révue de Thérapeutique Medico-Chirurgicale* for 1891, No. 18, p. 498, we find the method of Dr. Lienievitch, who proposes to relieve the vomiting which follows the administration of chloroform, by lavage. He believes that not only the chloroform, but also the irritation of the peritoneum produced by the antiseptics, is accountable for this symptom. He employs the tube of Faucher and washes out the stomach with warm water in which one-half to one per cent. of bicarbonate of soda has been dissolved, until the water returns clear. The abdominal walls are compressed (after an operation of laparotomy has been performed) during the washing. The results are excellent, in that, if necessary, water sufficient for the needs of the patient can be left in the stomach. The general condition improves, because there is freedom from nausea, gaseous accumulations, vertigo, and epigastric distress.

LACTOSE AND GLUCOSE AS DIURETICS.

B. Vespa has made a number of experiments as to the diuretic effect of lactose and glucose in various diseases. In the ascites of hepatic cirrhosis the diuretic effect was almost *nil*, and in acute and chronic nephritis it was hardly appreciable. In pleurisy with effusion, on the other hand, and in cardiac disease with disturbed compensatory action, the diuretic effect of lactose and glucose was most marked. As neither of these substances has any bad effect upon the heart or the nervous system they can be given at all times and in combination with any other remedy. They are well borne and do not cause nausea or other disagreeable effects.

(To be continued.)

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

The Seventh Annual Meeting was held in the Army Medical Museum, Washington, D. C., May 24, 25, and 26, 1892.

FIRST DAY.—TUESDAY.

DR. V. C. VAUGHAN, of Ann Arbor, Mich., read a paper on

A BACTERIOLOGICAL STUDY OF DRINKING-WATER.

Since the opening of the Hygienic Laboratory of Michigan University, October 1, 1888, more than one hundred and fifty samples of drinking-water have been examined at the request of health officers. These examinations have been both chemical and bacteriological, and the latter has developed some facts which may be of interest.

There are kept on hand at the laboratory a number of sterilized bottles, with glass stoppers, and of two

⁵ Practitioner, January, 1892.

⁶ Wiener Klin. Woch., Nos. 3 and 4, 1892.

⁷ New Remedies, June, 1891.

⁸ The American Journal of the Medical Sciences, 1891, No. 236.

and one-half litres capacity. These bottles are sterilized by steam, then set in wooden crates so arranged that the handle of the crate holds the stopper in place and makes it impossible to open the bottle without removing the handle, which is fastened by means of four screws. The use of sealing wax about the stopper is forbidden, and in cases where the over-zealous collector has resorted to this method "to make things more secure," the samples have been discarded and fresh bottles have been sent, with the request that the sealing be omitted. In some instances a piece of sub-limate gauze has been placed over the stopper and fastened about the neck of the bottle. This admits of the collector placing his seal upon the outside of the gauze. A health officer writes or telegraphs that he wishes one or more samples examined, and the desired number of bottles is sent. He is instructed to fill these and to return them immediately. In the great majority of cases the bacteriological examination is commenced at the laboratory within thirty-six hours after the samples have been collected. In some instances, the collector has been instructed to obtain new bottles and to sterilize them, but as a rule this has not worked satisfactorily, and many samples having been discarded on learning the method of sterilization employed, the above-described method is now insisted upon.

As soon as the sample reaches the laboratory, gelatine plates are made, and at the same time the chemical analysis is begun. The number of germs in given quantity of water (one drop or one cubic centimetre) is determined by counting the colonies which appear on the plates after twenty-four, forty-eight and seventy-two hours. It has been found that this number is very variable, and that it bears no constant relation to the amount of organic matter in the water as determined by chemical analysis. Moreover, the results obtained have led to the conclusion that the question of the fitness or unfitness of the supply as a drinking-water, cannot be answered by the number of germs. Some waters which contain hundreds of germs in each drop have been used by communities without causing sickness, while typhoid fever has, beyond any reasonable doubt, been traced to the use of water containing less than a score of germs in each drop. However, a record of the number of germs is kept in all instances; then each germ is isolated and grown on the various nutritive media. In fact, the life history of each germ is carefully observed and the observations recorded. The manner in which the germ grows on gelatine plates, in gelatine tubes, on agar, on potato, etc., is noted. The form and size of the germs, its reactions with staining re-agents, etc., are also studied and recorded. The effect of each germ upon guinea-pigs, mice, rats and rabbits, has also been studied. Especial attention has been given to those characteristics by which it has been proposed to distinguish the typhoid germ from other bacteria found in water.

Some of the conclusions which have been reached in this study are as follows:

(1) Many of the germs found in drinking-water will not grow at the temperature of the human body. These germs, therefore, are not capable of inducing disease. It matters not how rich a given sample of water may be in these germs, if it contains no others, it cannot be said that the water is a source of typhoid fever. The freedom of communities, using such water, from typhoid fever, seems to justify this con-

clusion. Such a water may not be, and certainly often is not, a desirable drinking-water. It may be turbid with suspended matter, unpleasant to the taste, and give off a disgusting odor, but there is no evidence that it can cause disease. Several interesting examples of this kind have come under observation. One of these may be mentioned. A certain city of about ten thousand inhabitants took, for a while, its public water-supply from a shallow lake, the bottom of which was covered with decomposing organic matter of vegetable origin. This water was turbid, unpleasant to the taste, and gave off unpleasant odors, but none of the bacteria in it grew at 38° C. On the other hand, many of the inhabitants of the city took their drinking-water from shallow wells, the water of which was clear, sparkling and palatable. The well-water, however, contained germs which grew abundantly at 38° C. The use of the lake-water in preference to that supplied by the wells, was recommended early in the spring of 1891. Some followed the advice, others did not. During the late summer and early fall of 1891, there were more than two hundred cases of typhoid fever in the city, and at a public meeting held by the State Board of Health in this place, about the last of October, every physician in the city agreed to the statement that there had not been a case of typhoid fever among those who used the lake-water exclusively. This positive testimony of the physicians was also confirmed by the other citizens.

(2) Of the germs which grow at 38° C or at higher temperatures, some are fatal to animals when injected subcutaneously, while others are not. This renders a division of these into toxicogenic and non-toxicogenic germs possible.

(3) There is no proof that these non-toxicogenic germs can multiply in the animal body. Indeed, all the evidence which has been gathered so far goes to show that they not only fail to multiply in the bodies of the rat, mouse, guinea-pig and rabbit, but some die when injected under the skin or into the abdomen. However, this does not furnish positive evidence that they would not multiply in the body of man. For these reasons, waters containing these germs have not been positively condemned, though it has been advised in some cases that their use should be discontinued.

(4) Some of the toxicogenic germs found in drinking-water produce the same symptoms and the same post-mortem appearances in the above-mentioned animals as are observed after the employment of Eberth's germ. Moreover, their pathogenic (toxicogenic) properties as tested upon these animals, are fully equal to those of Eberth's germ. They will not only live, but will multiply in the animal body. Waters containing these germs have in all cases been condemned.

(5) More than one germ obtained from drinking-water forms an invisible growth on potato.

(6) Several germs found in drinking-water will grow on the media prepared by Parietti, Uffellmann and others, as means of recognition of the Eberth germ. About thirty of the germs found in these samples of drinking-water have been studied sufficiently to admit of their identification. Several of these differ from any which have been reported by other investigators.

DR. G. M. STERNBERG asked whether these toxicogenic germs resemble the typhoid bacillus in morphology and whether they belong to the same class or group.

DR. V. C. VAUGHAN: The germs are bacilli and all

motile. One, the bacillus venenosus, is shorter and thicker than the Eberth germ that I got from the Hygienic Institute at Berlin. Another the bacillus venenosus brevis is still shorter; about twice as long as broad. There is one that liquefies gelatin only after four to six weeks. After it has been grown at a high temperature for a while it ceases to liquefy gelatin.

DR. G. M. STERNBERG: It is interesting that this germ liquefies at one time and at another time does not. It is only one case out of a good number that have been noticed by bacteriologists. Some of the phosphorescent bacteria behave in this manner. I got out a bacillus in Cuba which was a liquefying bacillus for a time, and after a time it failed to liquefy. We cannot, therefore, use the liquefaction of gelatin as an absolute characteristic to enable us to differentiate these bacteria. The definite characters which were first given to the typhoid bacillus will not stand. As to the invisible growth upon potato, we have all given that up as being distinctive. We encounter great difficulty in differentiating these lower organisms; and Dr. Vaughan has found, as many others have found, that it is hard to decide whether he has simply different varieties or well-defined species. There can be no doubt that we have species amongst these germs as well defined as in the higher plants.

DR. W. H. WELCH: The distinction which Dr. Vaughan makes between the terms "pathogenic" and "toxicogenic" is not what I anticipated it would be. I supposed that he would designate as a toxicogenic germ one that causes death by intoxication without multiplication of the germs inside the body. The distinction which he makes is doubtful and is difficult to carry out practically. Toxicogenic and pathogenic germs, according to Dr. Vaughan, are both capable of multiplication within the body, but the pathogenic ones cause lesions and symptoms that are definite and recognizable, and the toxicogenic ones cause symptoms and lesions that are vague and undefined. It seems to me this distinction is indefinite and of little value. I agree with Dr. Vaughan as regards the difficulty in the recognition of the Eberth bacillus.

Dr. Vaughan's statement that a number of bacteria, as obtained originally from water, appeared to be very unlike the typhoid bacillus, and that the same bacteria when obtained from the animal after inoculation grew like the typhoid bacillus, is, if confirmed, an interesting and remarkable observation. There is, however, a possibility of fallacy there which he has probably had in mind. A great many of these bacilli produce intestinal changes, and under these circumstances the bacillus coli communis is very likely to enter the organism. In this case one can readily obtain from the spleen and other organs the bacillus coli communis which may be mistaken for the micro-organism injected. It is perfectly true that one may obtain from the spleen of typhoid fever patients a number of different bacilli; and, as a rule, one can obtain in cases of typhoid fever, not perhaps so often from the spleen as from the kidney and lung, the bacillus coli communis. There is no doubt in my mind that a number of those who have written about the characters of the typhoid bacillus have been working with the bacillus coli communis, and not with Eberth's bacillus.

Unless one adopts the view of Dr. Vaughan, which is at present hardly likely to obtain general acceptance, that typhoid fever is not due to any one specific germ, but to a variety of more or less related germs, it is

difficult to see what the bearing of these experiments is upon the etiology of typhoid fever. I am not prepared to go the length of thinking that all these germs can be changed over into germs that may produce the same results as the typhoid bacillus and still less that they may under certain conditions acquire all of the morphological and cultural properties of the Eberth bacillus.

DR. V. C. VAUGHAN: If I could have had a number of spleens from the persons who had been drinking of each of these waters, it would have helped me very much. This is what I want to get in the next set of waters that I examine. When this is done, I think all will be able to decide positively, whether typhoid fever is due to one specific germ or whether there are varieties of the typhoid germ.

I meant the term "toxicogenic" to be indefinite. I cannot say that one of these germs will cause typhoid fever, because I have not tried it on man, and the disease that we get in the lower animals is not typhoid fever. I do not want to say that these germs are capable of producing any disease, and still I want to distinguish them from germs which do not grow at 38°, and which are capable of producing poisons outside but not inside of the body. It seems to me that to save the word "pathogenic" from meaning nothing, it would be better to use the word "toxicogenic."

With reference to the proof tests with the coli communis, I have studied this germ right along with the coli communis and Eberth's bacillus, and have made proof tests, and am satisfied that none of these germs are the coli communis, and that none of the germs that I have gotten from the spleen are the coli communis.

Certainly the great epidemics of typhoid in the cities generally start from the pollution of the drinking-water with typhoid stools; but I also believe that typhoid fever may originate without a pre-existing case of typhoid fever. I have seen cases of typhoid fever scattered amongst the farming population, amongst men, women and children who have not been off of their farms for weeks, and it would take a good deal to convince me that there was a common source of infection in these cases. I believe there are different germs, or different varieties of the same germ, that may cause typhoid fever, and that they are widely distributed.

DR. G. WILKINS, of Montreal, presented a paper on THE TREATMENT OF TYPHOID FEVER BY COLD BATHS.

The total number of cases upon which this paper is founded is 39, with two deaths. Of this number, seventeen were under the care of my colleague, Dr. Stewart, who is quite as warm an advocate of the baths as I am. During the first six months in which I made use of the cold baths, I adopted Liebermeister's method. Since then I have adhered to Brand's method, with slight modifications.

I seldom keep the patient in the bath longer than ten or twelve minutes, and place him there only when the temperature in the mouth reaches 102.6°. Whilst in the bath-tub, cold water compresses are placed on the head or the water poured over, and at the same time another assistant applies friction to the surface of the body. Sometimes, whilst in the bath, or just before it, half an ounce to one ounce of whiskey is given either in milk or water. The temperature of bath in 31 cases was 68° to 70°. In the remaining cases,

temperature 80° reduced to 68°. Greatest number of baths in any one case, 35; smallest number, two; average reduction of temperature, 2.8°, duration of fever, averaged thirty days; the date of entering into hospital, or commencing treatment, being on an average the tenth day.

I have not yet adopted the routine of treating every case of typhoid by cold baths. I treat mild cases on the expectant plan.

In regard to haemorrhage in this method of treatment, Hare states that in the large number of cases (1,173) in which he used the cold bath, whilst the actual mortality from haemorrhage was somewhat less than those treated on the expectant plan, the occurrence of haemorrhage was as frequent, though not more so.

It is a popular belief amongst the laity that the cold bath will tend to produce mischief in the respiratory apparatus, that is, the patient will "take cold"; as most of us know, quite the reverse in the case.

The advantages of the cold bath over other methods of treatment are: Immediate reduction of temperature from two to four degrees; resting quietly after it, or sleep; increased tonicity of the heart and slowing of pulse; fewer cases of lung complication, and, if present, marked amelioration of their symptoms.

The contra-indications are: Haemorrhage; peritonitis, and also determined opposition of patient.

Dr. OSLER: I will give briefly our experience with this method of treatment at the Johns Hopkins Hospital. From the opening of the hospital in May, 1889, until July 1, 1890, we treated the cases symptomatically. There were thirty-two cases with seven deaths. This was an unusually high mortality, which is accounted for in large part by the very serious nature of the cases. From July 1, 1890, to February 1, 1892, there were 107 cases treated rigidly by the Brand method. The temperature of the bath was 70°; the patients were bathed every third hour when the temperature rose above 102.5°. There were only eight deaths. One of these cases was not treated as he came in a moribund condition. The death-rate is practically that which has been obtained by the Brand method in all of the general hospitals in which it has been employed,—about seven per cent. In the garrison hospitals the percentage is two to three per cent. Cold baths do not always reduce the temperature, and there are cases treated under the most favorable circumstances which pursue a course almost uninfluenced by the baths. It is interesting to note historically that Nathan Smith, in his article on the treatment of typhus fever, written in 1823 or 1824, advocated, in a very interesting way, the treatment of the fevers by cold, and practised it as early as the summer of 1798, very shortly after its introduction by Currie.

Dr. KINNICUTT: This method of treatment has been adopted in the wards of St. Luke's Hospital for the past few years with exceedingly favorable results. My clinical experience corresponds closely with that of Dr. Osler and the author of the paper. I have frequently had cases of catarrhal pneumonia associated with the typhoid process that have done exceptionally well under the cold bath treatment. The greatest number of baths I have ever given in a single case is 175. The case was of exceptional gravity. The patient is now doing full duty as nurse in the hospital.

Dr. WM. PEPPER: I would like to say a word about

the labors of Hiram Corson, of Pennsylvania, in this direction. At the age of ninety years he is still practising in what is now a thickly settled region, but which was for many years but sparsely populated. He has advocated and practised the cold water treatment of the infectious diseases for the past sixty years, in opposition to all kinds of criticism. I want also to say a word of tribute to the value of the work of our colleague, Dr. Wilson, to whom, more than to any other man in America, is due the credit of calling attention to the cold water treatment of typhoid.

The difficulties of using the bath in private practice are vanishing. One of the leading druggists of Philadelphia, Mr. Frank Morgan, keeps a movable bathtub, made of fibre, available for the use of physicians at any hour of the day or night. These tubs are very light, can be had of any size, and can be moved through the door of any house. A hose thirty or forty feet in length will permit of its being emptied into some suitable place. It is in private practice that we will probably get the most complete satisfactory statistics.

I wish to testify to my own progressive conversion to belief in this treatment, and the desirability of its use in the vast majority of cases of typhoid as a routine treatment. I would like to emphasize the importance of friction during the bath. I feel that in this Brand has laid stress upon a point of first importance. We ought not to forget, also, the value of the cold pack.

Dr. I. E. ATKINSON: I wish to speak with the most unqualified approval of the cold bath treatment, from my own experience. There is one point in the history of typhoid fever that will always prevent our getting the statistics down to a desirable point of lessened mortality. There are a certain number of cases in which the temperature may never reach 102.5° and yet are fatal; these will probably not come under the influence of the cold bath treatment as at present conducted. I have now a case which threatens to die in which the temperature is constantly below 102°. Some statistics published by German authors, of typhoid fever treated during the Franco-Prussian war, show an exceedingly large number of fatalities in a series of cases where the temperature did not reach 102°. These cases probably occur often enough to keep the mortality at from five to eight per cent. in spite of any antipyretic treatment that may be adopted.

Dr. W. G. THOMPSON: Two years ago I undertook the Brand method and have since treated forty-eight cases by it, with results so satisfactory that I have reached the point where if I had the disease myself I should insist on being treated this way. I am surprised that Dr. Wilkins did not emphasize more the benefit of friction. It seems to me that the value of the Brand method of treatment, from the physiological standpoint, is certainly a double one; we apply a shock of cold to a very large surface of the body, which is a strong stimulant, and then we supplement this by a mechanical stimulant over an equally large surface. It does not seem to me that the reduction of the temperature is the principal good obtained. I have seen in this series of forty-eight cases three instances of hemorrhage of the bowels occur, but I could not attribute them directly to the baths as they had no relation to the time of the baths. There were only three deaths in these forty-eight cases, or about seven per cent. I should like to ask Dr. Wilkins and also Dr. Osler whether they have regarded the occur-

rence of menstruation during the administration of baths as a contra-indication for their continuance.

DR. TYSON: I desire to call attention to the cause of death in two cases of typhoid treated in this manner. The first case, a man, died a week or so after the bathing had ceased, the temperature during that time not reaching 102.2°. He died of embolic pneumonia, succeeding to numerous abscesses caused by large hypodermic injections of strichnia given by the assistants who thought he was in danger of heart failure. The second was a case of peritonitis, succeeding perforation. He was admitted on the tenth day of the disease and died on the seventeenth day. The cold bath treatment evidently does not prevent perforation.

DR. STOCKTON: It occurs to me that there are not a few cases which have benefited by the employment of baths even though the temperature at no time reaches 102.4°. I have seen cases where it seemed to me that the cold bath, under these circumstances, had favorable results. I also think we find undoubted benefit in the employment of the cold baths where the temperature does not remain lowered after them for any length of time.

DR. G. WILKINS: I believe friction is very important. The cold bath and friction has the efficacy of not only cooling the blood but the further effect of imparting tone to the vessels which has been lost by high temperature.

With regard to menstruation, my recollection is that it is not a contra-indication, but I have had no cases in which it has occurred.

I have had none of those cases to which Dr. Atkinson has referred — cases of continuous low temperature — but I do not see any objection to the administration of a bath in these cases, especially when combined with friction.

(To be continued.)

AMERICAN SURGICAL ASSOCIATION.

ANNUAL meeting held in Boston, May 31, June 1, and 2, 1892.

TUESDAY, FIRST DAY. — MORNING SESSION.

The Association was called to order by the President, DR. P. S. CONNER, of Cincinnati, who delivered the

ANNUAL ADDRESS.¹

The first paper was that on

THE TREATMENT OF UNCOMPLICATED FRACTURES OF THE LOWER END OF THE HUMERUS,

by DR. JOHN B. ROBERTS, of Philadelphia.

The following are the conclusions presented:

(1) In the treatment of fractures of the lower end of the humerus, the divergent angle between the axes of the arm and forearm must be preserved; and hence, dressings which interfere with the normal difference in level of the radius and ulna are not permissible.

(2) Fractures of the lower end of the humerus of ordinary severity are, as a rule, more successfully treated in the extended than in the flexed position.

(3) Because the "carrying function" is less liable to be impaired.

(4) Passive motion at an early date is harmful;

and should be deferred until union has occurred and the dressings have been finally removed.

(5) Good results as to anatomical conformation and as to motion are generally to be expected and can usually be obtained.

(6) Recent fractures in which satisfactory coaptation is not obtainable under anesthesia may with propriety be subjected to exploratory aseptic incisions. Old fractures, in which deformity and impairment of function are marked, may, within certain limitations, be subjected to refracture or osteotomy, for the relief of these conditions.

DR. JOHN E. OWENS, Chicago, said that he had never treated fractures of the lower end of the humerus in the extended position. The treatment of such fractures in the extended position seems to recommend itself for the following reasons: in the extended position there is no room in the olecranon fossa for neoplastic deposits; the great super-abundance of soft tissue in front of the joint when the arm is flexed marks the symptoms; the soft tissue in front of the arm presents more opportunity for laceration and cicatricial contraction; in the extended position no traction is made upon the vessels and nerves; that the natural angularity between the arm and forearm is preserved.

The speaker had experienced considerable timidity in the treatment of these fractures at the elbow on account of the impaired mobility which often results. The natural position of the arm in relaxation is that of flexion. He had treated these fractures in the flexed position. The extended position may cause tilting forward of the upper end of the lower fragment or its rotation forwards or hyper-extension may be caused.

Passive motion is resorted to in four or five weeks to an extent short of causing suffering. The material used for the splint is plaster-of-Paris. He had treated many of these fractures in cases where the injury resulted from railroad accidents where suits for damages are common, but he knew of no case where the question of defective treatment entered successfully.

DR. JOHN H. PACKARD, of Philadelphia, remarked that it was often difficult to tell the exact character of a fracture at the elbow-joint even under the most favorable opportunities for examination. He thought that the carrying function was rarely perfectly maintained under any plan of treatment. After fracture running into the joint there is liability to the formation of adhesive lymph. He thought that passive motion should be resorted to before the organization of the adhesive lymph. He advocated treatment of these fractures in the flexed position and described a splint of sheet zinc which he had used with satisfaction.

DR. CHARLES B. PORTER, of Boston, thought that the treatment advocated in the paper violated one of the first principles in the treatment of fracture, that is, to place the muscles in a state of relaxation. In the extended position the muscles which should be relaxed are not at rest. He had never seen any statistics in regard to the results of treatment of fracture in the extended position, in comparison with those in the flexed position. Until these are forthcoming, the profession will be unwilling to accept this as the best method of treatment. He therefore gave his adhesion to the treatment of these fractures in the flexed position rather than the extended position. Before the fracture is dressed, it should be adjusted under ether and then not looked at for two or three days and if found

¹ See page 565 of the Journal.

in position not again dressed for a week or ten days. In old fractures where there is sufficient deformity to demand osteotomy, resection of the elbow is better and by it a very useful arm may be secured.

DR. J. FORD THOMPSON, Washington, D. C., did not approve of the plan of treating fractures of the lower end of the humerus in a right-angled splint. In his treatment he adopted that plan of treatment which permitted the axes of the fragments being brought into relation with each other. This he had found to be the extended position. In two cases of compound fracture he had been unable to bring the fragments into line until the forearm was extended. The difficulty about the straight position is that it is disagreeable and uncomfortable to the patient. He considered plaster-of-Paris to be the best dressing.

DR. A. G. GERSTER, of New York, held that the bad results which are often seen after fractures at the lower end of the humerus are not necessarily due to the method of treatment. In several cases where he had had an opportunity to examine the joint he had found that the trouble was due to the throwing out of callus at points where the callus had been stripped off. Bad results are also often due to insufficient examination. Anesthesia is not employed and the dislocation which may accompany the fracture is not recognized. In the treatment of the fracture after replacing the fragments, such methods must be employed as will hold them in place. The flexed or extended position must be employed as necessary. He had found that, as a rule, the fragments were best held in place by treatment in extension. He does not employ passive motion and considers it useless and often harmful.

DR. STEPHEN H. WEEKS, of Portland, Me., said that it was his custom to treat supra-condyloid fracture of the humerus in a position of flexion, but he was satisfied that satisfactory results are secured by different methods of treatment.

DR. T. J. DUNOTT, of Harrisburg, thought that the manner in which the injury had been received had a great deal to do with the ultimate result. He was inclined to think that the flexed position would give a good result in many of these fractures associated with severe injuries. He prefers to treat the arm in such a position that the radius and ulna are parallel. In many cases where great injury is done to the soft parts, no splint can be applied, and under such circumstances the arm should be laid on a pillow and have water and laudanum applied for some days until the tumefaction goes away. If necessary, incision into the tense tissues is made.

DR. W. H. CARMALT, of New Haven, said that in some cases the ulna acted as a wedge between the two fragments at the lower end of the humerus forcing them apart, and reported a case which he had recently treated in the flexed position, using extension by means of weights and obtained a satisfactory result.

DR. J. COLLINS WARREN, of Boston, had observed the difficulty mentioned by Dr. Carmalt, but had attributed it to drawing forward of the condyles rather than to sinking in of the ulna. Dr. Bigelow had laid down the excellent rule of going through the movements for reducing a dislocation at the elbow in these cases. In this way the danger of overlooking a dislocation is avoided, and if there is simply a fracture, the manipulations mould the bone into place. The flexed position with an internal angular splint seems to be the best method.

AFTERNOON SESSION.

THE TREATMENT OF UNCOMPLICATED FRACTURES OF THE BASE OF THE RADIUS,

by DR. JOHN B. ROBERTS, of Philadelphia.

The following conclusions were presented:

(1) Fractures of the lower end of the radius vary comparatively little in their general characteristics, because but one form is usual.

(2) Muscular action has little, or nothing, to do with producing or maintaining the deformity.

(3) Immediate reduction of the fragments is the essential of treatment.

(4) Many of the splints devised for the treatment of this fracture have been constructed in ignorance of the pathology of the condition.

(5) The ordinary fracture of the lower end of the radius usually requires no splint, and should be dressed with a wristlet of adhesive plaster or bandage.

(6) When a splint is required, a narrow, short, dorsal splint, fixing the wrist, is all that is necessary.

(7) The method of dressing here advocated is the best, because it annoys the patient as little as possible by avoiding cumbersome appliances, and permits free voluntary movements of all the finger-joints.

(8) Passive motion is unnecessary until union has occurred and the dressings have been finally removed.

(9) Good use of the wrist and fingers is early obtained, and the anatomical conformation is restored as well as, and perhaps better than, by other more complicated dressings.

(10) Old fractures, which have been improperly treated by omission of immediate reduction, may with considerable success, be subjected to retraction at the end of six or more weeks. At later periods, readjustment may be possible only by osteotomy, which is a legitimate means of treatment.

DR. JOHN H. PACKARD, Philadelphia, had, in 1879, read a paper on this subject before the American Medical Association, in which he took the ground that the great difficulty in many of these cases arose from non-reduction. If the fracture of the lower end of the radius commonly known as Colles's fracture, is once reduced, there is little tendency to reproduction of the deformity. Many physicians think that all that is necessary is to apply the proper dressing. The most important step in the treatment is reduction. He did not agree with the fifth proposition, that no splint is required. He employs an anterior splint padded to fit the curve of the radius and reaching to the ball of the thumb. The patient can use the fingers freely. In ordinary cases who will take proper care of the arm, this simple splint suffices.

DR. CHARLES B. PORTER, of Boston, emphasized the necessity for complete anesthesia, then complete reduction and breaking up of the impaction, and then the application of a posterior and anterior splint; after a week or ten days, he allows motion of the fingers, and in two weeks motion at the wrist. He considers passive motion unnecessary except in old people where there is a rheumatic or gouty tendency.

DR. J. FORD THOMPSON, Washington, dwelt upon the disastrous results that often followed failure to reduce the displacement, or the use of improper dressings. After reduction of the fragments, he applies an anterior and posterior splint, secured lightly to the arm. He had not found it necessary, as a rule, to use either to accomplish reduction. In cases where there

was severe pain following the application of the ordinary splint, instant relief followed the application of a plaster splint, the hand being carried well to the ulna side. In several cases where the hands were useless from the inflammation of the sheaths of the tendons, he had tried to break these up under repeated administrations of anaesthetics, but the results had not been very marked.

DR. JOSEPH RANSOHOFF, of Cincinnati, said that in some cases the reduction could not be effected so readily as had been described. He had had three or four cases in which extension would not overcome the difficulty, and in such cases hyper-extension has been resorted to. In the treatment he is partial to Lewis's splint. After a week or ten days passive motion is resorted to.

DR. CHARLES B. NANCREDE, of Ann Arbor, called attention to the fact that a certain amount of the bone-tissue at the seat of fracture was destroyed, so that some deformity will necessarily follow. Reduction is the most important measure in the treatment. The fragments are then to be held in place by suitable apparatus.

FIBROID TUMORS OF THE UTERUS,

by JOHN HOMANS, M.D., of Boston.

Fibroid tumors were defined as aggregations of normal uterine tissues in abnormal situations and masses. They may cause symmetrical or more or less one-sided enlargement; they may be in the walls of the uterus or protrude towards its outside or towards its inner cavity; they may be incorporated with the uterus or connected with it by broad attachment or by a pedicle, or they may be entirely separated from it and get their nourishment from the vessels of the omentum or mesentery. They may be dense and edematous, or filled with lymph-spaces, or they may in very rare instances be fibro-cystic. It is probable that a certain number of the tumors which have been described as fibro-cystic belong to the class of fibroids with dilated lymph-spaces. True fibro-cysts are very rare.

In size these tumors vary from that of a mere dot to masses weighing fifty or more pounds. Their growth is slow. They are of common occurrence. In the past fifteen years the author had seen about 520 fibroid tumors.

Operations to relieve women with fibroid tumors are rarely necessary. The writer had operated on only 60 of these 520 cases, eleven per cent. The conditions which should guide us in recommending removal of the tumors are, when they threaten life by hemorrhage; when they are unbearable from their weight or the inconvenience they cause; when in a young woman they cause distress and shame from the alteration in her figure; when they cause much pain; when they cause serious obstruction of the circulation, or interfere with the action of the digestive or eliminative organs; when they cause obstruction of the bowels; or when their pedicles have become twisted and sometimes the whole uterus becomes twisted on its axis.

Death by hemorrhage is rare. The speaker knew of only three instances. In fibroids complicating pregnancy, the tumor may threaten to render delivery impossible, but nature will generally get the obstruction out of the way if you give her a chance.

The solid fibroid tumors rarely have adhesions, and are removed without much difficulty. Of fibro-cystic tumors the speaker had met with only eight in the 520

cases. None of these were successfully removed. One woman recovered from an incomplete operation. The others all died. The author had reported an extraordinary case of twisting of the uterus as the pedicle of a large fibroid tumor. The uterus was twisted one and a half times on its axis. The case was fatal, no operation having been done.

The natural history of ninety per cent. of fibroid tumors is to remain stationary after reaching a certain size and after the menopause to become cretaceous and atrophied. About ten per cent. require removal. The average age at which the speaker had operated was thirty-nine years.

Treatment by ergot alone is usually ineffective; combined with curetting it helps to stop hemorrhage. Treatment by high doses of electricity, a la Apostoli, sometimes stops hemorrhage, almost always relieves pain and gives strength, but rarely diminishes the size of the tumor. In four cases the speaker had practised removal of the ovaries for the cure of fibroid tumors. In one woman, forty-four years old, the tumor disappeared in a few weeks, and menstruation at once ceased. In another, thirty-three years old, the catamenia gradually ceased after three years and the tumor remained about the same. In another, thirty-four years old, there was irregularly recurrent bleeding for eight months after operation. A fourth case, thirty-six years old, was not at all relieved by the operation. He was inclined to regard this method as unreliable.

Curetting often cures the hemorrhage completely. This is followed by the application of tincture of iodine. The surgical treatment at the present time is almost wholly by removal of the tumor, with or without the uterus. If the tumor has been protruded into the cavity of the uterus, it should be enucleated and removed under careful antisepsis. Other tumors requiring removal must be removed by abdominal section. The operation may be finished in several ways. Sometimes the wound in the uterus can be closed by stitches or the pedicle may be treated by the extra-peritoneal method after constriction with the serre-nœud. Sometimes the stump is simply tied, as is the pedicle of an ovarian tumor, and then dropped. Sometimes the stump is turned into the vagina. All the different methods depend for their fundamental success on asepsis and on securing the vessels of the broad ligament, no matter in what way the pedicle or neck or body of the uterus is ultimately disposed of.

The condition of most patients from whom fibroid tumors have been removed is very comfortable. Some suffer from "hot flashes." Others grow extremely fat. A certain proportion, particularly those in whom the pedicle has been treated extra-peritoneally, suffer from ventral hernia.

Sometimes the bladder is cut off by the wire ecrasur, but in the only case he had seen the bladder healed in a few weeks by keeping it drained; and during the ten years that have elapsed since the operation, the bladder has been perfectly normal.

The length of the incision does not complicate the operation, provided there are no adhesions. Very rarely insanity follows the removal of a fibroid, as it does other surgical operations. The author had never seen this complication follow hysterectomy. He had seen two cases of tetanus in the case of other operators, but had had no case himself after hysterectomy. He had had one case follow ovariotomy.

He invariably sees that patients who have recovered

from abdominal hysterectomy are fitted with a firm abdominal supporter, and impresses upon them the necessity of being careful about carrying heavy loads or straining themselves.

DR. A. VANDER VEER, Albany, said that in looking over his notes he had found that the age from thirty to forty-eight years has been most prolific in the development of these tumors. The hemorrhage which is usually the symptom that attracts the attention of the patient, is dependent not so much upon the size of the tumor as upon its location. The hope that after the menopause is reached the fibroid will subside is not always verified. In some cases, the tumor seems to take on a more active growth at this time. As to treatment, curetting, with packing with iodoform gauze, will often stop bleeding. When this fails, in small fibroids, oophorectomy invariably cures except in soft myomas. The danger in treatment rests with the size of the tumor. It is the large ones that give the mortality after operation.

DR. J. IRVING MEARS, Philadelphia, held that where the only reason for the removal of the tumor was the large size of the abdomen, giving rise to unpleasant remarks, we should not be guided by the patient's desire that the operation should be done. He related the case of an unmarried woman, who desired the growth removed on account of the distention of the abdomen which it produced. He refused, and she passed into the hands of another practitioner who did operate, the patient dying five hours later. Dr. Mears divided these cases requiring operation into two classes. We are justified in operating where the hemorrhage endangers life; and we are justified in operating when the pressure symptoms are such as to make life unbearable. There are, however, many cases in which, under palliative treatment, life may be prolonged, the patient rendered comfortable and be able to enjoy life. He had found electricity palliative, but not curative. The tumor is sometimes reduced in size.

DR. GEORGE W. GAY, Boston, spoke of the treatment of fibro-cystic tumors, and referred to the use of tapping. He reported one case in which he began tapping in 1879, repeating it every two or three weeks for four years—ninety tappings in all were made. The patient is now in good health with a large abdomen, but had not been tapped for years. Other similar cases were reported.

DR. ROBERT ABBÉ, New York, referred to the value of the Trendelenburg posture and the early securing of the arterial supply of the uterus in these operations. He was rather surprised at Dr. Homans's assurance that death from hemorrhage was rare. He had thought the contrary. It is the symptom that frightens the patient and alarms the surgeon. He had had fair success with electricity, and would advise it in many cases. The tumor will grow but the hemorrhage will cease.

DR. JOHN HOMANS, Boston, said that the use of strong currents of electricity to the interior of the uterus caused some change to the mucous membrane, checking bleeding, but it did not prevent conception. It was his custom to advise patients with fibroid tumors not to marry. Cases bearing upon this point were related.

(To be continued.)

CHOLERA in a severe epidemic form is reported from the Cashmere valley in India.

Recent Literature.

A System of Practical Therapeutics. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, assisted by WALTER CHRISTIE, M.D., late Physician to St. Clements Hospital, and Instructor in Physical Diagnosis in the University of Pennsylvania. Vol. I. Philadelphia: Lea Brothers & Co. 1891.

This comprehensive system of therapeutics is intended to present to practitioners the views of those best qualified to discuss the treatment of disease, and to include the result obtained by investigators who have done much to advance therapeutics both as an art and a science. Volume I begins with a masterly introduction on "General Therapeutic Considerations," by Prof. H. C. Wood. It covers only thirty odd pages but it deserves to be read and re-read until its precepts become a part of the reflexes of every physician.

An article on "Prescription Writing and the Combination of Drugs," by J. P. Remington, Ph.D., contains much that is serviceable about incompatibility and prescription writing, but a portion of it is too pharmaceutical in character for a work of this kind. Details as to filling capsules, cutting lozenges, sealing cachets, decoction vessels, etc., with illustrations of each, serve to dilute rather than strengthen the article.

Following this is a good article on "Electro-Therapeutics," by A. D. Rockwell, M.D., in which the use of electricity in nervous diseases and gynecology is discussed at length.

An eminently practical and excellent article on the "Rest Cure for Neuralgia and Hysteria," by John K. Mitchell, M.D., deserves commendation, although it contains nothing especially new.

The article on "Swedish Movements and Massage," by Dr. Benjamin Lee, is illustrated by numerous cuts, and the pages devoted to this subject and its applications would make up a fair-sized treatise.

Dr. E. M. Hartwell has written an excellent article on "General Exercise," for medical purposes.

In "Climate," by Dr. S. Edwin Solly, the general principles of climatherapy are well outlined; the chief considerations which should govern one in the selection of a climate are rehearsed, and a valuable collection given of the reliable observations which have been made on the effects of climate upon phthisis.

"Hydrotherapy and Mineral Springs," by Dr. Simon Baruch, follows climate. The writer devotes a large share of his space to the technique of hydrotherapy. Under "Mineral Springs" analyses of many mineral waters are tabulated.

Every practitioner will find his views of disease and its prevention broadened, and he will be inspired with more pride in his profession after reading what Dr. H. B. Baker, Secretary of the Michigan State Board of Health, writes in regard to "General Sanitation." It shows a trained mind and large experience.

Following this are articles on "Disinfection," by George M. Sternberg, M.D.; and on "Antisepsis and Asepsis," by Prof. J. William White.

"Nutrition and Foods, including the Treatment of Obesity and Leanness," by I. Burney Yeo, M.D., deserves especial study. This article contains as much matter as is to be found in some works on dietetics.

The most voluminous article in the book is on

"Tuberculosis," by Dr. Solomon Solis-Cohen. It covers over 200 pages, and includes preventive treatment, superalimentation, description of various forms of pneumatic apparatus and various medicines which have been or are used in this disease. He holds that tuberculosis is a curable disease, but this statement is afterwards qualified. He appreciates fully the importance of attention to details in the treatment of this disease, and furnishes the physician with an abundance of suggestions that will assist him in the thoughtful and persistent care of his patients.

The treatment of "Scrofulosis and Rachitis" is well outlined by Dr. Walter Christie.

The articles on "Acute and Chronic Articular Rheumatism, Rheumatoid Arthritis, and Gout," by Professor James Stewart, are excellent and very practical.

An article on "Scurvy," by Dr. John B. Hamilton, Supervising Surgeon-General, United States Marine-Hospital Service, is concise and interesting.

A very excellent article on "Diabetes Mellitus," by Dr. Frederick A. Packard, ends the volume.

Without going into too much detail it is impossible to give anything more than an outline of the contents of this book. It has been conceived and carried out on broad lines, and contains much that should be read by all medical men.

Atlas of Clinical Medicine. By BYRON BRAMWELL, M.D. Vol. I. Part IV. Edinburgh: T. & A. Constable, 1892.

Part IV completes the first volume of this handsome work, which we noticed lately at some length. The text treats of small-pox, globulinuria, three new cases of Friedreich's ataxia, chronic insanity, hilarious mania. The plates depict small-pox, melancholia and mania. There is also an extended index. The second volume, to be issued from September, 1892, to May, 1893, will consist of three instead of four fasciculi, will contain at least 128 folio pages, and at least thirty plates. The subscription price for these volumes — \$7.50 apiece — is very moderate.

Essentials of Anatomy and Manual of Practical Dissection, together with the Anatomy of the Viscera. Prepared especially for students of medicine. By CHARLES B. NANCREDE, M.D. Fourth edition, revised and enlarged; with an appendix containing "Hints on Dissection," by J. CHALMERS DA COSTA, M.D. Philadelphia: W. B. Saunders, 1891.

This is a compendium, and as such to be condemned. A number of colored plates have been added, and some very poor representations of bones with the names on them according to Grey. The best part is that on dissection, which the compiler honestly states is not original. The whole is a poor affair. T. D.

Deafness and Discharge from the Ear: The modern treatment for the radical cure of deafness, otorrhœa, noises in the head, vertigo and distress in the ear. By SAMUEL SEXTON, M.D., assisted by ALEXANDER DUANE, M.D. New York: J. H. Vail & Co. 1891.

This brochure of eighty-nine pages is, as its title would indicate, not a scientific work, but an exposition of the success of the author in the performance of the operation suggested by Kessel for the removal of the osseous auditus; there is no precise description of the operation given, and the perusal of the book as a whole suggests the impression that it was written rather for popular than for professional reading.

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TOO LONG VACATIONS.

PROF. CHARLES F. THWING, in the *North American Review* for June, arraigns the present system of summer vacations as being too long. The college student suffers from so long a vacation through the loss of interest in his college work. His attention for a whole quarter of a year is directed to pursuits other than scholarly. His discipline is broken. He feels himself to be on a vacation, and vacation is usually intellectual vacuity. The vacation becomes dissipation, — moral, intellectual. Forces that are needed in college are not recruited. Hardihood, endurance, concentration, pluck, grit are not nursed through so long a period of inactivity. Laziness is the direct result of summer listlessness.

Recreation does not become re-creation. The daily newspaper is the strongest intellectual fare and the severest physical work he does is playing tennis. Professor Thwing thinks that if the student were to have only a month of such a kind of life, it would be well, but to stretch out these methods over three months is bad. Resting is one thing, and a very good thing, but resting prolonged becomes rusting. Rusting eats the tool not used. Students, like tools, lose as much by August rust as by February wear. Let every student have all the rest, recreation, diversion and amusement required for keeping his forces in the best condition, but he does not need one-fourth of the year. A healthy student can get as much vigor out of two months as out of three. Eight weeks in the woods will give all necessary power quite as well as thirteen. A short vacation is better for a tired and healthy man than more; than a long one spent in laborious diversions. By transferring five weeks from the vacation to the working period of the college, and by a little extra work, we might cut the college courses to three years without a serious shortening of the time spent in study, and also without any depreciation of the worthiness of the course itself.

The evils of the long vacation are more conspicuous in pupils of the common schools than in college students. These pupils are of the common people. More of them have parents whose purses are small than parents whose bank accounts are large. They spend their summers at home. They indulge in no outings more expensive or more prolonged than a visit to some relative for a fortnight, and their long vacation is no more recreative to jaded energy than a short vacation, and it is far more fraught with physical and ethical perils. Lawlessness is often characteristic of boys in vacation. They return to their books in the middle of September, not with an appetite whetted by proper abstinence, but with a distaste created by a barbarian life. Every teacher knows that at least a month is required to restore his classes to as good a working condition as was theirs at the close of school in June.

Professor Thwing regards the ordinary thirteen weeks as too long a vacation even for the teachers and professors, who would find nine weeks sufficient in which to recruit for their work. There will, however, be exceptions, for to many teachers in the colleges the vacation is the occasion for doing work other and harder than that of the college routine; and as a general thing it may be said that "no class of professional laborers are more laborious, none more deserving of long periods of rest than the teachers; and of all teachers, those in the public schools are most laborious and most deserving."

On one point there can be no disagreement; the relatively short vacation of the doctor is not half long enough to give him the rest and recreation which he needs. An absence from home and from work of three months *once in twenty years* would be a boon to many overworked members of the profession who hardly ever lay aside the harness even for a day. But vacations must be had—and if they are destined to be *short* they must be *frequent*—vacations which shall be characterized by absence of all fretting and worrying about loss of time and loss of income, or atheroma from cankering care and parenchymatosus degenerations will come all too soon.

The evil with the medical profession then is *too short vacations and too few of them.*

THE EXHIBIT AT THE ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY.

It must have occurred to many who witnessed the admirable exhibits of the State Board of Health, the Institute of Technology, the New England Kitchen, etc., at the Meeting of the Massachusetts Medical Society, that the substitution of the instruments, the methods, and the results of sanitary science, for the commercial preparations displayed in former years, had a more than obvious significance. To a thoughtful observer, it revealed in the most striking way the prevailing tendency not only to forestall as far as possible the need for remedies by preventive medicine, but also

to enrich the art of medicine by the application of sanitary science.

It is most encouraging to observe as an offset to the disappointments which curative medicine sometimes entails, that we have before us the fresh triumphs of preventive medicine. Foremost among the boards of health of America stands the State Board of Health of Massachusetts. By the establishment and support of the Lawrence Experiment Station—the first of its kind in the United States—it has set an example which must soon be followed by the other States. By its scrupulous oversight of adulterations in foods and drugs; by its studies upon questions of water-supply and sewerage profoundly affecting the public health; by its prompt and thorough investigations of epidemics; by its intelligent co-operation in the collection and publication of vital statistics, and by its high function as chief sanitary referee for the cities and towns of the Commonwealth, it worthily represents the most enlightened sanitary science of the time. A fresh conviction of this truth must have come to all who studied the simple but original exhibition of its sanitary work to which we have referred.

The exhibit of the Institute of Technology was, in a measure, a surprise. Few, probably, of those who saw it, comprehended fully its scope. It dealt not merely with sanitary chemistry, and heating and ventilation—for these this great scientific school has long been famous—but especially with sanitary biology. A notable exhibit under this head was cryptogamic botany considered, not chiefly from the ancient point of view of *materia medica*, but in the modern aspects of etiology and parasitism. The parasites of certain plants were shown, as were also some of the low organisms that infest water-supplies, with scavengers, such as the "sewage fungus" and yeasts, monads and common bacteria. Next to cryptogamic botany was bacteriology, with cultures of milk, water and air, as well as some of the pathogenic bacteria. The apparatus in this department attracted much attention. It is evident that the biologist in modern sanitary science has his place, henceforward, with the chemist and the engineer, and that all of these are powerful coadjutors of the scientific physician.

The Massachusetts College of Pharmacy gave an instructive educational exhibit, which included an extensive series of crude drugs, microscopic preparations, diagrams, models, books, etc., illustrating the structure of drugs, together with chemical and pharmaceutical apparatus.

Space does not allow us to do more than mention the interesting exhibit of the New England Kitchen or the Walker-Gordon Laboratory, in which highly successful efforts to advance the science of nutrition were clearly illustrated. Taken all in all the exhibitions this year were a marked success, and furnished the abundant assurance that Massachusetts is keenly alive to the promise and the potency of hygiene and sanitary science, as well as to the conservation of the public health.

MEDICAL NOTES.

SOCIETY MEETINGS. — The following medical societies will hold their annual meetings during the last half of June : June 14th, Medical Society of Delaware, at Dover ; June 15th, Minnesota State Medical Society, at St. Paul ; June 20th, American Association of Andrology and Syphiology at Richfield Springs, N. Y. ; American Laryngological Association, at Boston ; New Hampshire Medical Society, at Concord ; June 21, Colorado State Medical Society, at Denver ; June 28, Medical Society of New Jersey, at Atlantic City.

CHANGES IN DIFFERENT MEDICAL FACULTIES. — Prof. James Tyson has resigned as Dean of the Medical Faculty of the University of Pennsylvania but retains the professorship of clinical medicine. Dr. John Marshall has been appointed Dean. Dr. Charles McBurney has resigned the professorship of surgery in the College of Physicians and Surgeons, New York, and has been appointed professor of clinical surgery. Dr. Robert F. Weir has been appointed a professor of surgery to succeed Dr. McBurney.

THE CHICAGO WATER-SUPPLY. — We have heard a good deal on both sides recently as to the purity of the water-supply of Chicago. The *Chicago Times* has lately printed a report of the state of the lake which is discouraging. The flow into the lake of the Chicago River is about 400,000 cubic feet per minute. The water from this river is black and bad smelling and contains much of the sewage of the city. The influence of this flow is seen in the lake almost as far down as the crib from which the water-supply is taken. If the river continues to flow into the lake, it will in time be dangerous to take water from the lake even at several miles distance. The one safety is in creating a constant flow from the lake through the river to the Mississippi basin. With the exception of a ridge of land eight miles west of the city, there is a gradual drop down to the tributaries of the Mississippi River.

NEW APPLIANCES OF THE MEDICAL DEPARTMENT OF THE ARMY. — The medical department of the army is soon to be equipped with one hundred new ambulances of a different pattern from the ones now in use. The vehicle will be about three hundred pounds lighter than the present one. New medical and surgical boxes have also been designed, and their contents will be condensed as much as possible. These will be placed under the seat of the driver of the ambulance. Two oblong boxes, one on each side of the wagon, will be used for carrying water. The floor of the wagon has grooves, into which the feet of the litters are placed for sliding them into position. Each wagon contains two litters. Leather-covered seats, capable of being folded out of the way, extend along each side of the ambulance. The litters can be folded into a compact bundle when not in use and slung on the outside of the wagon. As far as possible the contents of the medical chest consist of compressed tablets. The weight of the chest is one hundred pounds. The

lower half is fitted with small drawers containing bandages, dressings and the like. The surgical chest weighs ninety-six pounds and contains tablets of anti-septic preparations, ether, chloroform and adhesive plaster. The drawers contain instruments and different surgical material. A folding packet, containing the necessary instruments for an ordinary emergency case, may be taken out by the surgeon in case of necessity. One hundred of these cases have already been distributed. The medical and surgical cases are so arranged that they may be slung, one on each side of an animal. Cots, chairs and tables, which are capable of being condensed into a very small space, for use in the field, are also provided.

VITALINE. — A good deal has been heard of this quack preparation in Russia recently. It was concocted by one Gatchkowsky, and was advertised as a miraculous panacea and rejuvenator. In spite of its exaggerated claims, the tide of fashion turned towards it, and it became a popular fad. It was given both by subcutaneous injection and internally. Finally General Gresser, the Prefect of St. Petersburg and a very important personage, was given an injection of it, from the effects of which he died. The inventor was immediately seized, and finding himself in danger, confessed that his specific was only a mixture of borax and glycerine, and that the death must have been the result of a dirty syringe.

WHIPPING AND HYSTERIA. — A trial which has excited much notice in Germany has resulted in the conviction of Dr. Wiederholz, the head of an establishment for the treatment of nervous diseases. A lady of fifty-one years, a patient in the hospital, was subject to acute hysteria. After trying to control her by other methods, the defendant had whipped her, on three different occasions. The action was brought by the patient's husband, and the question was argued whether whipping an hysterical patient was justifiable treatment. Professor Tusczek, who was called as an expert, said that it was scientifically inadmissible to use corporal chastisement in the medical treatment of nervous patients. Professor Pellmann said that he was personally opposed to the therapeutic use of whipping, that in State Hospitals it was absolutely forbidden. The defendant was condemned to three months imprisonment.

NEW ENGLAND.

A SOCIAL REUNION. — Dr. B. E. Cotting, of Roxbury, entertained the board of managers, the editorial staff, past and present, and the collaborators of this JOURNAL, together with some specially invited guests, at his house Wednesday evening, June 8th. The occasion was the twentieth anniversary of the reorganization of the JOURNAL. About fifty members of the profession participated in Dr. Cotting's hospitality.

THE BOSTON CITY HOSPITAL CLUB held its annual meeting and partook of its annual dinner at the Copley Square Hotel, Tuesday evening, June 7. After-dinner speaking was dispensed with, and the company adjourned at eight o'clock to listen to the

Shattuck Lecture, which was delivered by the Vice-President, Dr. J. F. A. Adams, of Pittsfield. The Club voted in favor of having a supper next year instead of a dinner, to avoid a conflict between the reunion and the lecture. The following officers were elected: President, Dr. R. H. Fitz, of Boston; Vice-President, Dr. J. A. Gordon, of Quincy; Treasurer, Dr. S. H. Ayer, of Boston; Secretary, Dr. R. A. Kingman, of Boston. Member of executive committee for five years, Dr. Chas. D. Sawin, Charlestown.

CHOLERA INFANTUM AND DIARRHEA. — The Boston Board of Health has issued a circular, printed in English, Italian, Hebrew and Russian, to be distributed in different parts of the city where cholera-infantum is most found, giving simple directions for the care of milk, as follows: The milk must be kept fresh. As soon as the milk comes, put it in a glass bottle; put the bottle in a kettle with a block of wood under it to prevent the bottom coming in contact with the kettle; put water enough in the kettle to come half-way up the side of the bottle; heat the water as hot as possible without boiling; then take the kettle from the fire and cork the bottle; let the bottle remain in the kettle for half an hour; then put the bottle in a cold place. This makes the milk safe without boiling. If possible, use a rubber stopple instead of a cork. The bottle and the stopple must be cleansed every day with boiling water.

OFFICERS OF THE MASSACHUSETTS MEDICAL SOCIETY. — Dr. J. C. White, of Boston has been elected President, and Dr. Francis A. Howe, Vice-President of the Massachusetts Medical Society.

SMALL-POX IN NEW BEDFORD. — It is reported that two cases of small-pox have recently been found in New Bedford.

NEW YORK.

THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL has purchased a site for its new buildings at the corner of Second Avenue and 20th Street. They will have a front of 98 feet on the Avenue and 110 feet on 20th Street and will be six stories in height. The architecture will be of the Italian school, and the first story is to be constructed of Indiana buff limestone. The upper portions will be of pale brown brick and terra-cotta.

ANOTHER DEATH FROM CHLOROFORM has been reported. The patient was a lad nine years of age, and the anesthetic was given at a physician's office for the performance of a minor operation.

RECOVERY FROM MORPHINE POISONING. — A remarkable case of recovery from morphine poisoning has occurred at the Gouverneur Hospital. The patient, a young Spaniard, took no less than eighteen grains at a single dose, for the purpose of committing suicide. When he was taken to the hospital the respirations had become reduced to one a minute. Atropia and the cold douche were used with good effect in the treatment, which had to be kept up unremittingly for three days.

Miscellany.

THE SUCCESSFUL TREATMENT OF CHLOROFORM SYNCOPE BY MASSAGE OVER THE HEART.

MAAS¹ reports two cases in which patients, apparently dead from chloroform syncope, were resuscitated by simple compression in the region of the heart. In both cases respiration and radial pulse had entirely stopped and the pupils had dilated. The manipulation of the heart was in both cases carried out for over an hour. As a result, both patients suffered from mental derangement, difficulty in swallowing and in speech, all of which passed off very slowly. The manipulation was conducted as follows:

The operator, standing upon the left side of the patient, pressed with quick, strong movements deep down in the region of the heart with the fingers of the right hand, while the ball of the thumb was placed above the left clavicle. The number of compressions was 120 or more a minute. The left hand should seize the patient upon the right side of the thorax. Soon after beginning these compressions the pupils became smaller and the paleness of the face disappeared.

THE NEW RIFLE PROJECTILES.

PROFESSOR BARDELEBEN has recently delivered an address in Berlin on this subject.² The modern rifle sends bullet with a narrow cylindrical form and pointed apex which at a distance of 1,000 metres has the power to pass through several human bodies or to disable two horses. Its line of flight differs but slightly from the line of sight. It has an inner core of lead enclosed in a casing of steel which prevents the lead from becoming deformed and spreading at the point of contact. This change is of much interest for military surgery. The bullet is lighter than any of the lead bullets, but is sent with a greater velocity. On account of its velocity and its small surface of contact, it merely punches out a hole causing very little commotion of the neighboring parts. It is more likely to cause fatal hemorrhage than the old bullet. If the new bullet wounds at all it will have sufficient power to pass through any part of the body. Colonel Boonen-Rivera, in his report on the civil war in Chili, the war in which Maunlicher rifles have been used, says that the number of dead on the battlefield was four times larger than that of the wounded. The effect of these bullets on bone has been made the subject of a series of experiments. Up to a distance of 400 metres the bone is invariably shattered, and at greater distances either clean perforations or oblique fractures result. In the next war the ratio of recoveries of those who can be removed still living from the field will be larger than formerly.

The new projectile is by no means so humane as it is sometimes called, since within similar periods of time and under equal conditions it kills and wounds more men than the old bullet. But the wounds which it causes, if they are not of a directly fatal nature, open to the surgeon, as a general rule, a far more promising field for exercising his skill and activity than those which were caused by the old bullet.

¹ Berlin Klin. Woeb., No. 12, 1892.

² British Medical Journal, May 21st.

ETOLOGY OF ACUTE CIRCUMSCRIBED
CÖDEMA.

BAUKE¹ in an article on this condition comes to the following conclusions: Circumscribed oedema of the skin, in the majority of cases, is found in patients suffering from some disturbance of the nerves. In some cases a hereditary influence can be traced. These swellings of the skin may follow certain psychical disturbances such as alcoholism but they may appear at the same time as neuralgias, Graves' disease or nervous digestive disturbance. The author believes that this condition should be considered as purely neurotic or functional, caused by the disturbance of the vaso-motor centres. Treatment should be directed to the general condition, the many digestive troubles or nervous symptoms.

MR. JOSEPH A. TUCKER.
RESOLUTIONS OF THE VISITING STAFF OF
THE BOSTON CITY HOSPITAL.

In the decease of the late Mr. Joseph A. Tucker, President of the Board of Trustees of the Boston City Hospital, the institution has lost a valuable friend and a wise counsellor.

The physicians and surgeons desire to express their high appreciation of his interest in everything relating to the welfare of the patients and the comfort and convenience of the Medical and Surgical Staff.

A man of sound judgment, of strict integrity, and kind feelings, ready at all times to entertain plans for the benefit of the hospital, ever loyal to its high reputation, and anxious to maintain the same, watching alike the interests of the city, of the inmates, and of the profession, he not only earned universal respect and esteem, but endeared himself to every one connected with the institution.

The Staff, recognizing their own loss, hereby tender their warmest sympathy to the family and friends of the deceased.

GEORGE W. GAY,
J. ORNE GREEN,
M. F. GAVIN,

The above was presented at a meeting of the Visiting Staff, held May 31, 1892, adopted, and it was voted that a copy be sent to the family of Mr. Tucker, to the Trustees of the Hospital and to the *Boston Medical and Surgical Journal*.

EDWARD J. FORSTER, M.D.,
Secretary of the Visiting Staff.

THERAPEUTIC NOTES.

CHOLERA INFANTUM. — Meinert² considers it essential in the treatment of gastro-intestinal catarrh of infants to prevent the increase of bodily temperature, and to replace, as quickly as possible, the loss of water in the body. He recommends cold baths, compresses and fresh air; every five minutes warm water, or sugar and water, or some herb tea. Milk should be diluted at first ten times, later up, to three times. In cholera nostras, also, he has obtained good results by large quantities of water.

TEST-TUBES FOR EXPLORING WOUND CAVITIES. — Fulton³ advises the use of test-tubes for exploring different wound cavities. The closed end is pushed into the wound and a beam of light directed into it from a head mirror. It can easily be made aseptic and is easily directed. It may be used in the brain, provided

the external wound is large enough, and a bullet found and withdrawn with very little injury to the brain.

NIEHAUS METHOD OF TREATING ERYsipelas. — This author recommends painting the healthy skin about two hands breadths away from the disease with contractile collodion. This should be applied several times until the skin becomes markedly contracted. In several cases he has seen the inflammation stop as soon as it has reached this wall.

Correspondence.

A P OSAL OF THE "BOSTON DIRECTORY."

BOSTON, June 4, 1892.

MR. EDITOR: — The publishers of the "Boston Directory" have issued a circular for physicians, offering to insert in connection with the names in the classified list of physicians, the office hours and telephone numbers for one dollar each in addition to the price of the Directory. To those who do not order the Directory the price is three dollars.

The proposal made in this circular does not seem to me one which the thoughtful members of our profession will care to embrace. My criticism of the plan is briefly this: So far as it is an advertisement physicians have no right to it, and so far as it is demanded for the convenience of the public the publishers of the Directory should be ready to make the innovation at their own expense.

Respectfully yours,

V.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, MAY 28, 1892.

Cities.	Estimated popu- lation for 1891.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhoeal diseases.	Diphtheria and croup.
New York	1,410,813	845	362	29.62	30.42	5.94	3.46	9.66
Chicago	1,250,000	439	189	12.84	14.98	1.15	3.24	3.62
Philadelphia	1,064,277	404	163	15.26	10.80	9.44	4.44	7.00
Brooklyn	880,789	344	111	11.02	19.14	1.45	.53	5.22
St. Louis	466,000	146	41	10.38	5.32	1.31	6.90	1.38
Boston	448,477	150	53	13.77	16.32	4.59	—	6.12
Baltimore	455,000	120	40	—	—	—	—	—
Cincinnati	386,860	89	27	6.72	11.20	1.12	2.24	—
Cleveland	309,000	102	46	12.74	23.52	—	—	5.88
Pittsburg	240,000	81	36	18.45	11.07	2.46	3.69	7.38
Milwaukee	232,220	70	32	17.04	15.62	—	2.84	12.78
Washington	250,000	66	33	13.20	10.80	1.59	—	4.80
Wash. D. C.	76,168	16	3	12.50	—	—	—	—
Charleston	65,165	51	22	13.72	—	—	7.84	—
Portland	40,000	20	1	—	15.00	—	—	—
Worcester	84,625	31	6	12.52	19.38	3.23	—	3.23
Lowell	77,694	32	11	11.18	17.12	7.82	—	—
Lynn	55,737	23	7	25.00	18.50	11.11	3.70	11.11
Lawrence	44,654	20	9	20.80	20.80	—	4.16	16.64
Springfield	44,179	15	2	13.33	6.66	—	—	6.66
New Bedford	40,733	15	4	—	6.00	—	—	—
Holyoke	35,376	20	14	25.00	20.00	—	11.71	7.14
Brockton	30,861	14	4	—	5.38	—	—	—
Haverhill	27,472	6	2	16.66	16.66	—	—	—
Quincy	16,723	5	1	—	20.00	—	—	—
Newton	14,500	5	0	—	—	—	—	—
Wellesley	13,947	9	2	—	11.11	—	—	—
Brookline	12,103	4	2	—	50.00	—	—	—
Medford	11,079	1	0	—	—	—	—	—
Everett	11,068	3	0	—	—	—	—	—
Hyde Park	10,193	1	0	—	—	—	—	—
Peabody	10,158	6	1	—	20.00	—	—	—

Deaths reported 3,187: under five years of age 1,200; principal infectious diseases (small-pox, measles, diphtheria and croup,

¹ Berlin Klin. Woeh., No. 6.² Wiener med. Woeh.³ Univ. med. Woeh., June.

diarrhoeal diseases, whooping-cough, erysipelas and fevers) 476, acute lung diseases 489, consumption 398, diphtheria and croup 171, scarlet fever 81, diarrhoeal diseases 69, measles 52, typhoid fever 44, cerebro-spinal meningitis 24, erysipelas 16, whooping-cough 14, small-pox 3, malarial fever 1.

From Boston, New York 23, Philadelphia 5, Brooklyn 4, Chicago 3, Cleveland and Pittsburgh 2 each. From typhoid fever Chicago 14, New York 8, Philadelphia 5, Cleveland 4, Washington 3, Brooklyn, Boston and Lowell 2 each, St. Louis, Cincinnati, Pittsburgh and Charleston 1 each. From cerebro-spinal meningitis Chicago 7, Brooklyn 5, New York 4, Worcester and Holyoke 2 each, Philadelphia, Cincinnati, Washington and Lowell 1 each. From erysipelas New York 6, Boston 3, Chicago and Brooklyn 2 each, Philadelphia, Cleveland and Pittsburgh 1 each. From whooping-cough Chicago 3, Charleston 2, New York, Philadelphia, Boston, Cincinnati, Milwaukee, Cambridge, Haverhill and Newburyport 1 each. From small-pox New York 3. From malarial fever New York and Springfield 1 each.

In the third three generations of England and Wales with an estimated population of 10,188,449, for the week ending May 21, the death-rate was 19.3. Deaths reported 3,769: acute diseases of the respiratory organs (London) 292, measles 197, whooping-cough 115, diphtheria 57, diarrhoea 35, scarlet fever 33, fever 24, small-pox (London) 4.

The death-rates ranged from 10.8 in Croydon to 24.7 in Manchester; Birmingham 21.5, Bradford 21.2, Bristol 23.3, Halifax 16.1, Huddersfield 15.1, Leeds 15.4, Leicester 19.7, Liverpool 22.5, London 19.4, Nottingham 17.9, Portsmouth 16.2, Sheffield 19.5, Sunderland 21.2, West Ham 14.4, Wolverhampton 20.0.

METEOROLOGICAL RECORD.

For the week ending May 28, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-meter		Thermometer		Relative humidity		Direction of wind.		Velocity of wind.		Weath'r.		Rainfall in inches.	
	Daily mean.	Daily max.	Maxim.	Minim.	Daily mean.	Daily mean.	E. 60° A. M.	E. 60° P. M.	E. 60° A. M.	E. 60° P. M.	E. 60° A. M.	E. 60° P. M.		
S...22	29.82	49	54	43	93	89	91	N.	E.	11	6	O.	R.	.45
M...23	29.80	50	55	40	90	88	89	W.	W.	18	8	R.	C.	.48
T...24	29.76	58	62	49	93	93	51	W.	S.W.	18	9	R.	C.	.30
W...25	29.84	66	72	56	48	55	52	S.W.	S.W.	18	7	F.	O.	.32
T...26	29.76	67	78	56	94	74	81	S.W.	S.W.	12	12	O.	O.	.32
F...27	29.54	62	67	57	84	59	52	S.W.	S.W.	14	11	O.	C.	.11
S...28	29.81	62	70	54	61	46	54	W.	W.	18	9	F.	C.	
	29.77	59	61	51	74	70	69			16	9			.02

* O, cloudy; C, clear; F, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow. + Indicates trace of rainfall. # Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 28, 1892, TO JUNE 3, 1892.

Leave of absence for fifteen days to take effect in the early part of next month is granted MAJOR ROBERT M. O'REILLY, surgeon, U. S. A., Fort Logan, Colorado.

MAJOR DAVID L. HUNTINGTON, surgeon, U. S. A., having reported in accordance with Par. 9, S. O. 167, c. s. Headquarters of the Army, is assigned to temporary duty in charge of the office of the medical director, Headquarters, Department of Arizona, pending the absence of the medical director, COLONEL JOSE R. SMITH, surgeon, U. S. A.

Upon the return of CAPTAIN BENJAMIN MUNDAY, assistant surgeon to Fort Sully, S. D., FIRST-LIEUTENANT ALLEN M. SMITH, assistant surgeon, will proceed without delay to Fort Yellowstone, Wyoming, and report to the commanding officer for temporary duty with troops in the National Park during the season. Par. 1, S. O. 80, Headquarters, Department of Dakota, St. Paul, Minn., May 24, 1892.

CAPTAIN C. N. B. MACAULEY, assistant surgeon, U. S. A., granted leave of absence for three months.

SOCIETY NOTICES.

AMERICAN NEUROLOGICAL ASSOCIATION.—The eighteenth annual meeting will be held at the New York Academy of Medicine, June 22d, 23d and 24th.

NEW HAMPSHIRE MEDICAL SOCIETY.—This Society will hold its one hundred and first anniversary meeting, Monday and

Tuesday, June 20 and 21, 1892, at Concord, G. A. R. Hall, 15 Warren Street.

AMERICAN LARYNGOLOGICAL ASSOCIATION.—The fourteenth annual Congress will be held at Boston, Mass., June 20, 21 and 22, 1892. The sessions will be held at the rooms of the Medical Library Association, 19 Boylston Place. The profession is cordially invited to attend.

AMERICAN ASSOCIATION OF ANDROLOGY AND SYPHILOLOGY.—The sixth annual meeting will be held at the Spring House, Richfield Springs, N. Y., June 21 and 22, 1892.

The meetings of the Association will be held in one of the parlors of the Spring House.

Members desiring rooms may engage them in advance by writing to the proprietor of this hotel at Richfield Springs, N. Y.

RECENT DEATHS.

RALPH C. HUSE, M.D., M.M.S.S., died in Georgetown, Mass., June 1st, aged forty-nine years. He graduated from the Harvard Medical School in 1866, having previously served in the army during the war. Since graduating he has practised in Georgetown. He was Vice-president of the Essex North District Medical Society.

CHARLES E. DELVERGNE, M.D., died in Brooklyn, June 4th, aged thirty-five years. He was lecturer in the practice of medicine in the Long Island College Hospital, and surgeon of the Thirteenth Regiment.

JOHN E. KIMBALL, M.D., of Saco, Me., died June 2d, aged seventy-three years. During the war he was surgeon of the Twenty-seventh Maine Regiment.

BOOKS AND PAMPHLETS RECEIVED.

Medical Orthoepic. By J. F. Oaks, M.D., Columbia. Reprint. 1892.

Flint's Encyclopedia of Medicine and Surgery. Vol. i, A to I. New York: J. B. Flint & Co. 1892.

Intestinal Anostomosis and Suturing. Cases of Gall-Bladder Surgery. By Robert Abbe, M.D. Reprints. 1892.

The Removal of Adenoïd Growths from the Vault of the Pharynx. By H. Hoyt Butts, M.D. Reprint. 1892.

The Nervous and Mental Phenomena and Sequela of Influenza. By Charles K. Mills, M.D., Philadelphia. Reprint. 1892.

Proceedings of the Association of Medical Officers of American Institutions for Idiotic and Feeble-minded Persons. Sessions 1889, 1890, 1891.

The Cure of Stricture Simplified. A Neglected Case of Chronic Pleurisy. By Wm. H. Dukeman, M.D., Los Angeles, Cal. Reprints. 1892.

Influenza and the Laws of England concerning Infectious Diseases. By Richard Sisley, M.D., M.R.C.P. London: Longmans, Green & Co. 1892.

Higher Medical Culture, Medical Science, based on the Four Vital Properties and Laws of Organic Force. By W. R. Dunham, M.D. Cambridge. 1892.

Outlines of Zoology. By J. Arthur Thompson, M.A., F.R.S.E. Lecturer on Zoology in the School of Medicine, Edinburgh. New York: D. Appleton & Co. 1892.

Psycho-Therapeutics; or Treatment by Hypnotism and Suggestion. By C. Lloyd Tuckey, M.D. Third edition. London: Baillière, Tindall & Cox. 1891.

The Successful Treatment of Chronic Diseases; A Plea for their more Methodical Management. By Simon Baruch, M.D., New York. Reprint. 1892.

Some Differential Points in the Diagnosis of Syphilis and Tuberculosis with Illustrative Cases. By Prince A. Morrow, M.D., New York. Reprint. 1892.

Diseases of the Urinary Apparatus; Phlegmasia Affections. By John W. S. Gonley, M.D., Surgeon to Bellevue Hospital. New York: D. Appleton & Co. 1892.

A System of Gynaecology, based upon a translation from the French of Samuel Pozzi. Revised by Curtis M. Beebe, M.D., Chicago. New York: J. B. Flint & Co. 1892.

The Fourth International Prison Congress, St. Petersburg, Russia. By C. D. Randall, official delegate from the United States. Washington: Bureau of Education. 1891.

Diseases of the Eye; A Hand-book of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, M.D. With two hundred and sixteen illustrations and two plates. Philadelphia: W. B. Saunders. 1892.

Les Tumeurs de la Vesicule. Par J. Albaran. Chef de Clinique des Maladies des Voies Urinaires à la Faculté de Médecine de Paris (Hôpital Necker). Preface par le Professeur Guyon, 75 figures et 9 planches. Paris: G. Steinheil. 1892.

Address.**THE MEDICAL PROFESSION AND THE COMMONWEALTH.¹**

BY FRANK WINTHROP DRAPER, M.D.

(Concluded from No. 23, page 568.)

II. But the true test of the value of laws lies in their faithful execution and judicious application. Let us inquire, now, concerning the relationship of our profession to the Commonwealth's executive department.

In two instances, Massachusetts has selected its supreme executive magistrate, the governor, from the medical profession and from the fellowship of this Society. Dr. John Brooks was elected governor in 1816, and continued in office, by annual re-election, until 1823. He was succeeded by Dr. William Eustis, who died in office in 1825.

The second office in the gift of the people, that of lieutenant-governor, has been held by three members of this Society, David Cobb, Henry Halsey Childs and Elisha Huntington.

The executive council of the Commonwealth has had many medical representatives in its membership in the course of its history. They have done excellent service in advancing the interests of our profession whenever occasion offered. This was especially the case in 1877, when the assistance of the late Dr. William Cogswell was of great value in the reform of the methods for conducting investigations of deaths by violence.

In municipal administration, our profession has shown its adaptability for public affairs in numerous instances. Repeatedly, medical men have demonstrated their acceptability in the office of mayor and in various subordinate positions in city and town government.

So, too, we may recall the admirable services of our brethren in the conduct of school-administration and in the interests of free education under the fostering care of the Commonwealth.

Again, in the management of the public institutions belonging to the State, medical men have found a congenial field for the exercise of their wise judgment and executive ability. Ever since the establishment of the first lunatic hospital by the State in 1832, at Worcester, the boards of trustees of these and similar foundations have welcomed the acquisition and assistance of physicians as an essential element of their success. If one desires a demonstration, let him compare the State Almshouse at Tewksbury, as it is to-day, with its scandalous condition before 1876; its discipline, its fine hospital service, its freedom from abuses, are in marked contrast with the methods and results which characterized its management before a physician took charge of it under the authority of the legislature.

Why should not the executive efficiency of men trained as physicians be utilized still further in our public institutions? Doctors of medicine who can manage great hospitals, can govern penal reformatories; and convicts, as well as lunatics, would be none the worse if their full sanitary supervision were in the hands of specially-trained officials. Who can doubt that the discipline of a convict prison would be im-

proved if it were manifest that judicious care were taken to maintain the health of the inmates by the humane and practical methods of medical resident officers?

There is one chapter of the Massachusetts laws whose administration has always been an agreeable duty for the members of our profession. The statutes relating to the public health have been especially interesting to medical men, and the intelligent practical application of them has always had its best agents among physicians. Ever since the Board of Health of Boston, ninety years ago this summer, fitted up an observation hospital on Noddle's Island and invited Dr. Benjamin Waterhouse and other physicians to demonstrate upon the patients therein the immunity from small-pox infection which Jenner's recently discovered operation of vaccination bestowed, Massachusetts has found among her physicians the most zealous advocates of sanitary legislation, and the most faithful servants in executing her enactments. To the public, this paradox has always been a mystery. Why medical practitioners should desire earnestly to hinder or control the spread of disease, when their livelihood and material prosperity depend on its presence and their reputation for skill and success is directly related to its prevalence, is a problem which the ordinary intellect is unable to solve. The reason is that the vulgar apprehension has not grasped the difference between a vocation and a trade. The enterprising tradesman is not accustomed to place obstacles in the way of the successful development of his business, and he cannot understand why physicians do not follow his example. But we are not engaged in the pursuit of a trade, and our methods are on a higher plane than those of mercantile or of mechanic industries. We look to the welfare of humanity as our first and fundamental object and the practitioner who forgets this and seeks primarily the gains which are the objective reward of business methods is not true to the high purposes of his profession. The majority of physicians follow the more unselfish course and are therefore ready always to aid and to adopt measures which will protect the people from preventable suffering. It is, therefore, not surprising that they are earnest allies of the State in the administration of sanitary laws.

And what a comprehensive array of enactments affecting the public health, the statute-books of Massachusetts present! The silence and indifference of the State with regard to curative medicine is in the sharpest possible contrast with the number and variety of laws relating to preventive medicine. Recall the almost bewildering array of laws which are at this moment in force, designed to promote health and resist the encroachments of disease. The board of health of your city or your town has the power, under the statutes, reinforced by decisions of the Supreme Court, to interfere with personal and property rights in the most arbitrary fashion, if only the interference is in the name of the public health.

But the cynic will ask, of what use is all this cumbersome, and complicated sanitary machinery? Of what value has it been to the State? Do not epidemic diseases prevail just as they did before all this legislation was piled up for our admiration? Has not pandemic influenza stalked defiantly around the world again and again in the last three years, without the least hindrance from any source? Do not scarlatina and diphtheria enter our households and take possession in spite of

¹ The Annual Discourse delivered before the Massachusetts Medical Society, June 8, 1892.

all precautions, official and personal, devised to bar them out? Do not the children die by hundreds in August, and the grand-parents perish by the score in March, just as they did a century ago? Has tuberculosis been controlled?

To all such pessimistic questioning, ample answer has been made in the impressive address to which you listened three years ago,² and in the thoughtful essay³ of last evening. It is unnecessary for me to add to their authoritative statements. But it is not improper to remind the sceptic that the general mortality-rate has been made to diminish; that the average duration of life has been appreciably increased; that in communities which use vaccination with reasonable fidelity, small-pox is rare enough to be a luxury. Is it of no consequence, moreover, that dwelling-house architecture has followed the admonitions of physicians and sanitarians and that ventilation and drainage are no longer left to chance? Is it of no importance that the water-supplies of the State are more carefully protected from pollution than ever before, and that every new supply is critically tested in all its relations, physical, chemical and biological, before it is accepted? These are some of the queries that are suggested by doubts of the unbeliever in sanitary teachings and practice. To you, who have always been in harmony with the progressive spirit in Massachusetts which is embodied in her health laws, obstructive criticism will appear unworthy of serious reply. Preventive medicine looks to the future hopefully. Many of its problems will be solved by the trained bacteriologist whose greatest achievements are still before him. And in all measures — scientific, practical, administrative — the Commonwealth, in the future as in the past, will look to us and our successors as its best allies and most efficient agents for the protection of the people from harmful influences affecting life and health.

There is one other department of the State's affairs to which I wish to refer briefly, because in its administration our profession has been conspicuous. I allude to that chapter of the Public Statutes entitled "Of Medical Examiners." The Massachusetts law relating to inquests is no longer on trial as a questionable innovation; it has passed the experimental stage and is now as permanent as any part of the judicial system of the Commonwealth. The practical experience of fifteen years has demonstrated that the legislature of 1877 enacted a law of exceptional value, thoroughly adapted to fulfill the purposes for which it was designed. And the reason for this is easy to comprehend. When the general court determined that the venerable but discredited and abused system of investigating violent deaths by means of coroners and their juries had outlived its usefulness in Massachusetts, it was under obligation to substitute a legal mechanism that should be simple, practicable, economical and trustworthy. And this it did with such consummate success as to challenge admiration. It provided a procedure that accomplished the desired end promptly and without friction. It differentiated the purely medical elements of the inquiry from those which were essentially judicial. It created a medical officer whose sole function should be to determine, in any case of mysterious or violent death, the anatomical proofs of unlawful acts entering into the cause of death; and it made his conclusions upon this purely medical question the basis

for further inquest-proceedings by judges trained in the methods of taking and sifting evidence and required to solve the problem of accountability in the case. The initial stage, then, of the inquest is always the medical determination of the cause and manner of the death, and for this determination the law provides ample resources.

That the Massachusetts method of conducting these inquiries is acceptable is shown by the entire absence of real criticism, as well as by the cordial approval of jurists who have studied its details. It has commanded itself to the authorities of other States, who find in it the indications of a great advance in comparison with the clumsy and inverted coroner system. It is quiet in its operation. It does not, by the exercise of noisy authority, upset and demoralize households overshadowed by recent grief. Its results are certain and tangible. It secures for use at trials for homicide the testimony of trained men well fitted by experience to be witnesses. It has absolutely eliminated all scandal and sensationalism from inquest proceedings. It has saved money to the county treasuries, at the same time affording better service to the people.

From this allusion to a special medico-legal function of great responsibility which our Fellows are discharging acceptably, the transition is easy to a consideration of the relationship which our profession, in general, bears to the third great department of the Commonwealth's government, the judicial department.

III. To state the proposition broadly, the medical man finds himself in a court of justice under the same exigencies which occur to the ordinary citizen, service on the jury alone excepted. He is either a plaintiff seeking reparation for alleged wrong, or a defendant meeting a charge of wrong doing, or a witness summoned to testify in an issue to which others are the parties. Although these are the three varieties of necessity which take him as they take others, out of the routine of daily life, and subject him to novel experiences more or less unpleasant, he is conscious that his vocation as a physician places him in a peculiar attitude unlike that of the layman. And it is these peculiarities characterizing our position in court that I now ask you to consider with me.

As a plaintiff, the physician is a spectacle of extreme rarity. I think it can be claimed with confidence that medical men, whatever their other characteristics may be, are not noted for litigiousness. They are generally too busy to find in the behavior of their fellow-men the occasion for law-suits. Although there is a certain hyperesthesia which is said to apply to the profession in connection with the subject of medical etiquette, this never finds its way to the gates of the temple of justice; and in the ordinary affairs of life the doctor of medicine is seldom found on the hither side of the abbreviated Latinism which in the court docket stands as a low barrier over which the parties to a suit defy each other. The doctor in court as a plaintiff, then, need not detain us longer.

But with the doctor in court as a defendant, strenuously bending his energies and using his resources to resent an imputation upon his skill and care, the case presents a theme of serious interest, for it concerns the whole domain of our legal rights as medical practitioners. Most of the suits in which physicians are the defendants are actions instituted by former patients to recover damages for alleged malpractice. This fact suggests, at the very outset, some consideration of the

² The Annual Address for 1880, by Dr. H. P. Walcott.
³ The Shattuck Lecture for 1892, by Dr. J. P. A. Adams.

obligations which the law imposes on physicians and surgeons in their treatment of the sick and injured persons who employ them.

To the medical man as he stands in the presence of a person who has summoned him for professional aid and counsel in time of suffering, the law says: " You were under no legal obligation to respond to the summons which called you to this bedside. But having responded, and having undertaken the care of this case, you have assumed certain obligations which the law fully recognizes, and which you cannot avoid, except at the risk of losing both money and reputation.

" Your obligation is that of an implied contract which, though less formal and specific than an express contract executed in writing, is not less binding in its nature.

" Under the obligations of this contract, you do not warrant or insure that all the results of your attendance shall be satisfactory, that there shall be a perfect recovery, or that your treatment shall effectually stand in the way of unexpected complications.

" But you engage, under the law, to treat this case in such a way that any injury which the patient suffers, in its course or subsequently, cannot reasonably be traced to a neglect of competent and ordinary care and skill on your part as its proximate cause."

Such are the principles established by the common law as the intangible environment of the medical or surgical attendant for his guide and control under the usual circumstances of his employment. They are the rules which underlie and govern those actions of tort, wherein the claim is set up that negligence and unskillfulness on the part of the medical attendant have caused injury and distress to his patient, and that money will be the proper remedy to heal the wrong imputed to him. And it is reassuring to record the fact that these rules and principles, however difficult they may seem to be as practical guides, have been in effect a shield rather than a menace to the interests of defendant physicians, and that the cases are few in number in which it can be said that unjust and unfounded verdicts have been returned by juries upon the issue of imputed negligence and unskillfulness.

But while this is true concerning the issue of suits for damages, it is also true that the law interposes no obstacle in the way of initiating such suits. Let us suppose that the medical attendant has done all that the law requires in the care of his case, that he has to the best of his ability used ordinary and reasonable skill and diligence and has avoided all measures that could be criticised as experimental, he may, nevertheless, through circumstances and conditions over which he has little control, find himself a defendant in an action of tort brought by his patient. Perhaps the dislocated shoulder which he reduced months ago, with proper attention to all surgical details, persists in giving pain and in refusing to resume its mobility. Perhaps the fractured femur is restored to duty with a permanent and irremediable though unavoidable shortening. Perhaps the broken forearm, when taken out of the splints, has an uncomely deformity in spite of the most assiduous care. In any of these events, whatever has happened out of the ordinary course, it is easiest to blame the attending physician for it; and the next step is equally easy, the initial step in the proceedings for what is called " getting satisfaction." The story is an old and familiar one. Too often the motive that initiates the suit and urges it forward is a

most unworthy one, and is scarcely to be distinguished from the wickedness of blackmail. Too often it is nurtured and stimulated by lawyers more hungry for plunder than ambitious for a good name. Too often it is encouraged by the unfriendly words and actions of professional rivals. Over these prosecutions, the physician is powerless to bring any control; however strong his defence may be, he cannot prevent a trial, with all its annoyances, risks and costs, except by adopting the course of paying money to settle the claim out of court, — a course which any self-respecting medical man will not adopt, though sorely tempted to escape thereby all the wretched miseries of a jury trial.

It has often been suggested that, in view of their liability to unwarranted claims for malpractice, medical men would do well to organize co-operative defence unions for their own protection. Such a suggestion has much to make it attractive, and it has actually borne fruit in England in a flourishing and fully equipped association prepared to assist its members when they are brought to bar as the victims of irritable, or avaricious, or depraved human nature. But while such a fellowship might serve to deter the unscrupulous from bringing suits against physicians, in such suits as are pressed to trial, the appearance of a medical defendant backed by the money and the sympathy of a numerous company of his professional brethren might have a reactionary effect upon juries, who are notoriously ready to render verdicts against corporations and corporate interests.

Let me turn, now, to a far more familiar relationship between medical men and the courts of law — that sustained by physicians as witnesses. Rightly considered, the function of a medical witness establishes one of the most honorable positions in the service of the Commonwealth which a member of the medical profession can discharge. That the function has been abused and has experienced a measure of disrepute, is quite true. That there are certain features of it which are deplorable and most unsatisfactory is also true. But it is likewise true that, with all the criticism and disparagement of which it has been made the subject, medical evidence will continue to be an indispensable element in judicial proceedings, and the medical witness, if he be properly equipped for his service, has it in his power on every occasion to command the respect of all who observe him, and to be, in the court of justice as in the sick-room, the representative of sound learning and of manly deportment.

It has been customary to classify medical witnesses as of two distinct varieties, according to the character of their testimony; they are regarded as ordinary witnesses if they testify to facts, and as expert witnesses if they express opinions or undertake to interpret facts. But if we recall the usual methods under which medical witnesses are employed, we shall see how artificial is such an attempt at classification. The truth is that nearly every piece of medical testimony is a composite of facts and opinions in which the facts largely predominate. But they are medical facts, the correct determination and statement of which require medical knowledge, skilled training, and a special aptitude. When the chemist exhibits to the jury the arsenical mirror which is the result of his analysis of suspected organs or remnants of food, he is submitting, not opinions, but incontrovertible facts. When Prof. Austin Flint testified that in his microscopic and chemical

examination of the material found under the finger-nails and on the clothing of a degraded criminal accused of the murder of a woman and the mutilation of her body, he detected crystals of tyrosine and other substances which must have come from no other part of the intestinal tract than that found cut open in the victim's abdomen, he was giving an indisputable physiological demonstration of objective facts, which fastened the guilt of the homicide upon the prisoner. When Prof. Jeffries Wyman, in the memorable case in 1850, established by his evidence the identification of a mutilated human body, the work that he did was again a demonstration based upon accurately observed anatomical material.

The same principle is seen in the numerous civil suits growing out of imputed negligence, whereby accidental injuries result. The testimony of medical men connected with these cases is largely directed to the description of symptoms and conditions of a purely physical and objective character. Even in the comparatively rare cases in which a medical man is engaged to answer purely hypothetical questions, and to give his opinion upon assumed facts, of which he has no personal proof, the examination does not end with this exhibition of the expert's technical office, but wanders away into the various regions of medical knowledge pertinent to the questions at issue.

The conclusion, then, which I wish to draw from these considerations is that all medical testimony is of the nature of skilled service, and deserves appreciation as such. It has been held repeatedly that knowledge, in science or art, is its possessor's capital, accumulated through years of study and application; and that neither the Commonwealth nor any individual can make any lawful requisition upon that capital without substantial reimbursement. This is the well-recognized and universally applied rule governing the employment of medical experts, who go to court to state opinions with facts. Why should not the same rule attach to the service of surgeons and physicians who, heeding the peremptory summons, respond as witnesses to give evidence of clinical facts, of physical appearances, and all those other matters the correct observation and description of which require a definite amount of knowledge, the fruit of much patient study or long experience? The demand which in the name of the Commonwealth is made upon medical men, wasting their time in tiresome delay, interrupting their professional routine of duty, subjecting them to disagreeable and irritating experiences, extorting from them facts acquired under the confidential relations of the sick-room, is not one which, under prevailing conditions, is answered with cordiality. It is among the unpleasant incidents of professional life. It reminds us that of all departments of our practical work, the medico-legal service is the only one which we cannot evade, or transfer to others. The call of a judicial summons is imperative, and physical disability will alone excuse its neglect. When, therefore, we consider the nature of medical testimony, and the degree of technical knowledge required for its correct presentation, we do not exceed propriety if we ask that the State shall in some way provide fit methods for the adequate reward of such skilled service, rendered under compulsion.

One other feature of medical testimony solicits attention; it relates to the deportment of the witness in court. The ideal medical witness possesses these quali-

ties: his demeanor is dignified and unconstrained; he has large stores of well-seasoned knowledge; he is quick in apprehension, firm and immovable in his convictions, but conservative and judicial in reaching them; he has a retentive memory, a reserved courage and an imperturbable temper; he is terse, direct, clear and concise in statement, and especially is an adept at translating every technical term into words and phrases clearly intelligible to every jurymen; he abhors garrulity, flippancy and trickery; he aims to be candid, impartial, disinterested.

Sometimes, though very rarely, one sees a physician on the witness-stand who represents faithfully all these requirements; he is the object of our emulation and envy. Much more commonly, however, medical testimony illustrates characteristics quite in contrast with the ideal. The physician whose methods on the witness-stand we do not desire to copy, is garrulous, affected, pedantic, flippant, ready to engage in controversy, dogmatic, and above all saturated with partisanship. Of all these faults, the last is the most common and conspicuous and the one which has brought the greatest reproach on medical men as witnesses; it is this which has led judges on the bench to disparage and belittle medical experts; which has caused writers on jurisprudence to discredit their value; and which, in practice, has induced juries to ignore their testimony altogether in trying to reach a verdict. But while admitting that partisanship is a too common element of medical evidence, I insist that it is an evil for which medical men should not be held responsible. It is the unavoidable fruit of the conditions under which the modern practice of the law is pursued. The physician in the sick-room does not exhibit the disposition here depicted; but place him under the novel and subtle influences of the court-room and he becomes another creature. A case, for example, occurs which offers an opportunity for the use of a medical expert. You receive a polite invitation from the counsel, to serve him in that relation. You do not inquire very closely into the grounds that have determined the selection; you feel complimented, at all events, and you consent to be retained. Now, having fully committed yourself to the service of your employer, your independence is almost necessarily laid aside. You are expected in preparing for the trial to develop all the elements in the case favorable to your employer's side only. The advocate consults with you, nourishing in you a controlling partiality, and doing all in his power to stimulate a cordial interest in his client's cause. The witness thus approaches the trial, expert chiefly as a partisan medical advocate. Against the insidious influences which promote this surrender of mental equipoise, few physicians could successfully defend their judgment.

Then at the trial itself, still more compulsory influences encompass him. He now finds himself in the arena, marshalled with others to defend his own side, to defeat the opposing side. He is harassed by the technical limitations of the rules of evidence. Through the inability of lawyers to conduct acceptably an examination on medical subjects, he is made inadvertently to state views which, under other circumstances, he would not think of supporting. Professional pride compels him to defend stoutly his position, a retreat from the ground being deemed worse than the blunder which took him there.

Now, what can be done to modify, or, if need be, to

revolutionize these unsatisfactory methods? As may readily be inferred from what has been presented, the first thing to be desired is the removal of the medical witness from the influences and temptations of partisanship; he must be lifted far above the plane of bias. To secure this end, the best way, because it is the most in accord with American notions of fairness, is that which would provide that the medical expert in any action at law, civil or criminal, should be the choice of the two parties interested in the litigation; or, in the event of their disagreement or neglect, the choice of the court.⁴ The advantages of such an innovation, both theoretical and practical, are too plain to be mistaken. Theoretically, such a plan would secure experts in fact as well as in name, since it would obviously be for the interest of all concerned that the best available medical judgment should be obtained upon technical questions involved in the issue on trial. Instead of the present deplorable exhibitions, so amusing to lawyers, so discreditable to our profession, so subversive of justice, we should see a true representative of medical science, appearing in court as the interpreter of the facts established in the evidence. We should see him, with the same judicial independence which the presiding justice himself must display, passing judgment, without fear or favor, on matters which legitimately fall to his office as an expert. There would be little danger that this altogether honorable function would fall into unworthy hands under such a system; the man chosen would, from the necessities of the case, be well known as the possessor of special knowledge fitting him to comprehend and to elucidate the points presented in the testimony. The man of pronounced and peculiar views, the man of hobbies, would not be sought; his judgment is already discounted.

In practice, the expert thus selected would make such investigations as the case demanded, would listen to all the testimony, and at the proper time would report his conclusions, either as oral evidence, or, preferably, in the form of a written statement. Here would occur an opportunity for professional distinction. The name of medical expert, instead of conveying with it a questionable flavor, would become a term of good repute, attracting rather than repelling the master-minds in our profession; while the many-sided questions presented in legal suits and actions would offer occasions for medico legal reports such as have made Germany and France confessedly the leaders in forensic medicine.

But at just this point, the typical barrister, with a gesture and in tones familiar to those of us who have ever served as witnesses, says: "Stop a moment! I object!" And when asked to state his objection, he replies: "I object because such a scheme would interfere with the constitutional right of the individual citizen to defend his life, person, property or character by producing 'all proofs that may be favorable to him.' I object because when I undertake to prosecute a suit at law or when I am engaged to defend a client, I wish to know precisely what the evidence favorable to my cause is to be; I have no intention of remaining wholly ignorant of the medical conclusions up to the time of the expert's appearance in court. I am in court theoretically to see that justice is administered; but I am

there in reality to do what I can to win a verdict for my client, and I wish, in order to secure that end, to employ all lawful means, including medical evidence of my own choosing; and if this evidence is skilfully warped and stretched to meet well the exigencies of my claim, it will be so much the more useful and acceptable." This is the lawyer's view of the matter; and it is this spirit which has hitherto stood as an insuperable obstacle in the way of a much-needed reform. It is a purely selfish spirit held by a large part of the legal profession, but repudiated by a few conspicuous and honorable exceptions.

Meanwhile, we as physicians have a plain resource. When required to discharge the duty of medical witnesses, let us diligently aim to illustrate a high standard. Let us avoid well-recognized errors to the utmost of our ability. Let us decline to act simultaneously as medical advocates and medical witnesses. Let us endeavor to give our testimony with the same candor and the same independence which would characterize our statements if instead of the peculiar environment of a court of justice, we were in the presence of an audience of friendly, but critical, medical associates. Difficult as such a duty is, it is not impossible of performance.

IV. This review of the relationship which our profession holds toward the Commonwealth will be incomplete without some reference, in conclusion, to a still higher obligation resting on us. It is the obligation of loyal, patriotic citizenship, involving duties superior to any of those which I have undertaken to discuss. Men sometimes speak of their citizenship as a privilege, to be used or laid aside with easy indifference. Properly considered, it is much more than this: it is a living trust, a priceless heritage, involving duties as well as rights. In the presence of educated physicians, there is no need to emphasize this. They recognize their obligation and their opportunity,—their personal obligation of earnest loyalty, their opportunity, through the places they hold in the community and in the household, to raise the level of civic virtue by precept and example. To them, the service to the State which the best type of citizenship presents is not expressed in political zeal, in greed for office, or in an active partisanship which in medical men is always especially offensive and objectionable. It means, on the other hand, absolute independence of all machine methods in politics. It leaves practical politics to professional politicians, but it never fails or omits to register its convictions through the agency of the ballot. It is found in sympathy with all reasonable methods of moral and social reform, but avoids impracticable radicalism and sensationalism. It stands for popular education and defends the public schools from all assaults, overt or insidious, that would impair their usefulness and freedom. It insists on fidelity and honesty in official station. It aims to aid in shaping a healthy public opinion upon all matters pertaining to the welfare of society and the elevation of mankind. It protests against the fastidious indifference which too often marks the attitude of educated men toward civic affairs. When the nation's life is assailed, it is found at the front represented by such men as Derby and Otis, and Sargent, and Hooker, and Bell and Lyman, adding new lustre to the proud title of Massachusetts volunteers.

Fellows, these closing years of the nineteenth century are making an extraordinary record of progress in all that pertains to the science and the art of medicine.

⁴ The practicability of this method was demonstrated by the New Hampshire Supreme Court in a case which occurred during the preparation of this discourse.

The brilliant, almost audacious, achievements of modern surgery and the beneficent triumphs of practical and preventive medicine inspire our admiration and stimulate our zeal. In the rapid movements of our noble profession along all the lines of advanced development, we find it difficult to keep our leaders in sight; star-eyed science certainly does not encourage loitering on the part of her votaries. But while we strive to keep in touch with this spirit of progress in all that belongs to our domain as physicians, let us not forget the claim which the Commonwealth may properly make upon us as citizens. Let us seek earnestly, each in his own community, to illustrate the highest ideals of loyalty and fidelity. So may we, in a double sense, as physicians and as citizens, discharge our duty to humanity.

Original Articles.

THE AMERICAN PHYSICIAN.¹

BY WILLIAM EVERETT, PH.D.

I FEEL that there is a peculiar right in a society of physicians to call on any man for a speech, when I reflect how completely it is owing to their mercy that one is able to speak at all, or even to exist.

When I sit down to this well-provided board, and am allowed to eat as much or as little as I want to, I cannot but reflect on the times when the doctors of the elder generation would not let me eat half enough, and the doctors of my own wanted me to eat a great deal too much; and I rise to thank them for all their mercies in preserving my life against the consequences of my own folly.

In old times, gentlemen, you are well aware that your profession was associated with that of the barbers, who in more ways than one tried to avert "the natural shocks that flesh is heir to." I suppose no man ever got up out of a barber's chair, and heard the cry of "next," without being devoutly grateful that his Figaro had not revived the recollections of his predecessors, the barber-surgeons, and experimented on the precise distinction between the carotid and maxillary arteries.

It is said that the illustrious James Otis, when stricken with dementia towards the end of his life, was under very severe petticoat government, and on one occasion returned thanks after dinner in the form: "We thank Thee for all Thy mercies, and especially that we have not had our noses bitten off." I thank you, gentlemen, to-day, individually and collectively, that I survive to this hour, in possession of the great majority of my physical organs, and the enjoyment of their normal functions.

But I desire to say again, as I have said in public before, that I have exceedingly little sympathy with the popular jokes on the medical profession. They are not even chestnuts,—they are nothing but horse-chestnuts, bitter, but utterly devoid of nourishment. I believe that no theory can be more false than that Nature cures her own ills, or the ills in which man's ignorance and wilfulness involve her, without the aid of science. Worse than false, that theory is wicked which believes that the ignorant practitioner has any secret revealed to him, which the man of medical

science does not attain much better by study, by experiment, by observation, by instruction.

Quackery and patent medicine could not survive for an instant, if they did not furnish excellent means for evading the prohibitory laws, and soaking their votaries' frames in alcohol and opium, under the name of bitters and sarsaparilla. I believe, sir, that your educated physician is no ignorant tamperer with half-known drugs and less known bodies; he is the true son of Apollo, the god of light and prophecy. Talk of your Faith Cure and your Christian Science! the true faith cure comes when the sensible patient trusts himself implicitly to the accomplished physician; the true Christian Science is that promulgated by the great army of healers who tread in the Master's steps, who go about doing good, and turning the Sabbath to its nobler use.

I have been in my life, sir, often in the hands of physicians; and I have been disposed to bless the sickness which taught me the meaning of devotion, of patience, of friendship. I have found that they knew every secret of my frame; I have found that they were competent to deal with those deeper secrets which anatomy and physiology, chemistry and bacteriology do not reveal. They were able to deal with the very cases wherein Shakespeare declares the patient must minister to himself. They could extirpate the nerves of morbid sensibility; they could apply a ligature to an aneurism of self-esteem, and divert the current of ambition to a healthier passage; they could dissolve the rasping calculi that obstructed the channels of generous purpose, and they could detect the foramen between the corrupted and the purified chambers of the soul, which is apt to infect the nobler passions of man long after the fetal heart has closed. Yes, sir, after their skill has set me on my feet, after they have nerv'd my flaccid arm, brightened my lack-lustre eye and cleared my tuneless voice, I have loved to seek their company, no longer for the paid services of a physician, but the priceless comfort of a friend. I may not introduce here the names of the living, but I should be destitute of all sense of reverent obligation, if I did not record my dues to Henry Holland and James Jackson; and I trust it will be many years before the members of the Massachusetts Medical Society fail to follow one who drops a tear of admiration and love over the grave of Frederick Winsor.

The skill and kindness of the medical profession is one of those eternal facts to which the heart of man bears unshaken testimony. That single line in Homer (you all know Greek; you're not fit to be doctors if you don't),

ἰητρός γαρ ἀνὴρ πολλῶν ἀντάξιος ἀλλαν,
"One healer counts for many another man."

those three blessed words of Paul, "the beloved physician," tell more truth than all the satires of Rabelais and Molière.

Even in the days of starving and blood-letting which seem so strange and cruel to us, the physician was still revered and loved for his kindness. I know no nobler tribute to the profession than that of Sir Walter Scott:

"I have lain on the sick man's bed,
Watching for hours for the leech's tread;
I have listed his words of comfort given,
As if to oracles from heaven;
I have counted his steps from my chamber door,
And blessed them when they were heard no more."

Yet in the light of modern science, it seems amazing

¹ Remarks made at the Dinner of the Massachusetts Medical Society, June 8, 1892.

that the citadel of Sir Walter's constitution survived the alternate assaults and starvings whereby it was besieged. Yet even under the thin gruel and draining lancet he and his contemporaries loved and trusted their doctors :

" Pleased to the last, they cropped the floury food,
And licked the hand just raised to shed their blood."

Gentlemen, I beg you to hold fast to this sacred attribute of kindness. I have had some fear in this respect of our younger friends, who like Sol. Gills, are so " chock full of science," that they are apt to look upon the human frame too much as a field for experiment rather than as the residence of a sensitive, quivering soul. They are so proud of their new processes, that they like, I am afraid, to experiment on *corpora cardia* as well as *corpora vitta*. I confess I have a preference for physicians of at least my own age, who have more knowledge of patients, if they have less of diseases. I feel nervous about entrusting a case of colic to my young friends and former pupils for fear they should suspect typhilitis, and perform laparotomy before I could turn round. I am afraid in those famous hospitals of Europe, whatever else they learn, they find as Dr. Holmes once said at this very board :

" Kindness untroubled by our grave M.D.'s."

I read an interesting paper in your *Medical and Surgical Journal* the other day (which I read every week, and immediately feel the symptoms of all the diseases described there), wherein a rising practitioner declared he actually discovered, if he administered ether, especially to children, gently and slowly, instead of forcibly and abruptly, he not only got rid of some distressing tracheal irritations, but positively produced more perfect anesthesia and found the operation proceed more favorably, than if he clapped the towel peremptorily over the reluctant nostrils. I should hope so! But it is sad that any of our young doctors should have ever been trained to think otherwise, or should suppose that mechanical roughness of operation can facilitate their work, instead of, in fact, hindering it.

It may be well, sir, for purely pathological or physiological purposes, to send our medical students to Europe. It may be that Prussia is the best climate in which to track the bacilli which are most likely to infest the air of Boston, or that an Austrian hospital, in wards crammed with what your illustrious *confere*, Dr. Oliver Goldsmith, called "the rude Carinthian boor," presents exactly the field in which to prepare for the diseases of New England. It may be that European practitioners and teachers have a keener eye, a defter hand, a more powerful spirit of guidance than our own. But you cannot acquire among them, what if one does not keep them up there is danger of losing, those qualities so precious for a physician, in which America yields to no nation in the world. The time, I believe, will come, sir, when Europe has learned to know us better, that Vienna and Berlin and Paris and Glasgow will send pupils here to study the highest standard of a physician's dealings with his patient, unknown in the old world; that humanity which treats with equal courtesy and gentleness the poorest and meanest son of God; that chivalry, lost to the monarchies and commonwealths of Europe, but living, thank heaven, among us, which treats every woman with tenderness and propriety, and sees a sister and a princess in every daughter of the great King. It is possible, sir, that for scientific training to the physi-

cian's work we yield to other nations; in moral and sympathetic fitness, I believe we surpass them all, and that we should allow nothing to deprive us of this glory.

THE FOUR YEARS' COURSE AT THE HARVARD MEDICAL SCHOOL.¹

BY R. H. FITZ, M.D.

In examining the handsome and instructive catalogue of the Harvard Medical School Association, recently published by that body, evidently under the personal supervision of its talented and versatile President, Dr. Chadwick, it appears that more than two-thirds of its members are residents of Massachusetts. I am easily convinced that nearly all of this 700 are members of our greater Society whose annual meeting we delight in attending. It is therefore eminently fitting that a teacher in the Harvard Medical School, however ill prepared he may prove, should make some report of its progress to those who have been satisfied with it in the past, and who, it hopes, will be proud of it in the future.

Only once before in its existence has so radical a step been taken as during the present year. Many of you remember the powerful address of that most illustrious of American surgeons, Henry J. Bigelow, delivered before this Society, in 1871. The discussions in the medical faculty which preceded that discourse were those which led to the establishment of the graded course of medical study extending over three years. The success of that step, then so uncertain even in the minds of some of its oldest and best friends, is now a part of the medical history of this country.

In the meantime a generation has been born and has attained its freedom. Our *Alma Mater*, Fair Harvard, although she denies the right of suffrage to her medical offspring, has decided to keep them a year longer under her maternal care. Perhaps by this means she may learn to place such confidence in their interest and devotion as to be willing to take their advice and aid even in so important a matter as in the selection of overseers. Let us hope that the graduates of the four years' course in the medical school may be considered no less worthy of this honor than their younger brothers who have spent a like number of years at her side, perhaps, in preparing to enter the Medical School.

In and after September, 1892, every student entering the Harvard Medical School, before receiving its degree of Doctor of Medicine, will be required to complete a four years' course of graded medical study. The statement is simple enough but the result has been arrived at only after years of discussion and of patient waiting for the time when such a policy might be regarded as other than suicidal.

It has not been undertaken as a forlorn hope to rescue the school from a stress of financial depression, but has been agreed upon in a season of prolonged, pecuniary prosperity, and at a time when the number of its students is the largest ever assembled.

It has not been announced with the thought that it might result in large benefactions, or as the condition of gifts which would ensure its success. On the contrary, it has been decided upon in the face of a probable diminution in the number of students, a loss which

¹ Remarks made at the Dinner of the Massachusetts Medical Society, June 8, 1892.

may result in a considerable pecuniary sacrifice on the part of its teachers. All honor to them, and especially to those who are largely dependent for their support upon the fees derived from students, and who anticipate, not without reason, the possibility of a reduction in salary to meet the necessary expenses of maintaining and perfecting the improved plan of education.

The essential features of this plan consist, first, in giving up the teaching of general chemistry to the preparatory schools, and in demanding evidence of a knowledge of this subject as a requirement for admission. It is felt that medical chemistry alone should be taught in medical schools, and the time hitherto given to instructing the student in the former subject will, hereafter, be given to enlarging his knowledge of the latter. A wholly new course is to be established, one in clinical chemistry, which is designed to familiarize the student, more than ever before, with the chemical knowledge and manipulations so essential in the recognition of disease.

A second important use is to be made of the gain in time obtained by requiring a satisfactory knowledge of general chemistry when the student is admitted. He will be compelled to train himself in those bacteriological methods especially needed in diagnosis and treatment. He must personally undertake, in the laboratory, to render aseptic his hands and instruments, his dressings and the field of operation. He will be taught experimentally, by personal failures as well as successes, the essentials of modern, surgical, obstetrical and, one may say, general practice. Whatever methods are of value in the recognition of disease-producing bacteria, he must learn, and by appropriate trials, show his familiarity with them.

Finally, a much demanded improvement in clinical teaching is contemplated. Separate courses of instruction will be offered to the beginner and to the advanced student, each adapted to the degree of development which he has attained.

It will also be attempted to give to every student individual opportunities of watching the progress of a certain number of cases of disease in the hospitals, from the time of the admission of the patient to his discharge. He will be expected to keep full and accurate records of these cases and to be prepared at all times to present the evidence which he has accumulated. The end in view is to make every graduate a hospital pupil as well as a medical student.

From this necessarily brief statement of what is planned it is evident that the school will offer the student more than he has ever before received. It will demand from him a better preliminary training, and it will give him, in return, a more profitable employment of his time.

From you, its graduates and friends, it asks only approval and encouragement, and, in the light of past experience, it rests assured that it does not ask in vain.

A PREMATURE announcement that M. Pasteur had succeeded in stopping the attacks of confirmed epilepsies by anti-rabic inoculations found its way a short time ago into the daily papers of Paris. The possibility of this has been entertained for some time, and that in a recent case sent to the institute, attacks probably epileptic have disappeared. As yet no positive results have been obtained.

THE ELECTRICAL TREATMENT OF PELVIC INFLAMMATION.¹

BY W. L. BURRAGE, M.D.

THERE being many practitioners who are sceptics as to the value of electricity in the treatment of the diseases of women, I will begin by quoting from our latest and probably best books on gynecology, namely, the sixth edition of "Thomas on the Diseases of Women."

In this work there is an entire chapter devoted to "Electricity as a Therapeutical Agent." In the chapter we find the following: "It is true there are still many gynecologists who do not believe in its particular efficacy (electricity) partly because they have either had no experience with it or because many of the most startling results have been reported by gentlemen who were not gynecologists, but electricians, or, better, electrologists, who possibly may have been mistaken in their diagnosis and in the results which they claim to have obtained. Still we feel confident from our own experience that we have in the two varieties of the electrical current most potent agents for relief from suffering, and perhaps even cure, in many cases of pelvic disease in the female."

So much for electrical treatment in general. A little further on in the same chapter we read: "Chronic pelvic cellulitis and peritonitis, pelvic neuralgia, local and reflex, pelvic lymphadenitis and lymphangitis—in all these three conditions the local and reflex pains are mostly due to inflammatory indurations and adhesions of the tissues involved. The vaginal roof is hard and rigid, the uterus immovable, perhaps displaced, and the uterine ligaments tense and inelastic. If not of too long duration and particularly if the exudation represents a distinct swelling, the galvanic current may effect decided results."

Gynecological electro-therapeutics conducted with anything like scientific methods dates its beginning from the initial work of Apostoli, only ten years ago. In this country the names of Engelmann, of St. Louis; Mundt, Rockwell, Gunning and Goelet, of New York; Baker, of Boston; Lapthorn Smith, of Montreal; Massey, of Philadelphia; and Martin, of Chicago, are most familiar as workers in the field. My own experience with electricity in gynecology extends over two years, during which time I have made about a thousand applications, including those made in private practice and at the Electro-Therapeutical clinics at the Free Hospital for Women.

Thanks to the introduction of better instruments, to the exact measuring of doses, and to greater attention to detail we are now experimenting intelligently and arriving at definite results, impossible under the old regime.

As regards the treatment of pelvic inflammations with electricity, we have to consider two stages of inflammation, the acute, and the sub-acute or chronic. In the acute stage most authorities are against treatment with galvanism. Experimentally, I have tried galvanism in one case of acute pelvic inflammation with salpingitis. The patient had thirty-six milliamperes, negative, for five minutes. The pain was increased, the temperature went up from 100° to 102° and she was made much worse.

Apostoli advocates bipolar faradism, first vaginal,

¹ Read before the Section for Obstetrics and Gynecology of the Suffolk District Medical Society, March 9, 1892.

and after increased tolerance, intra-uterine, using the coil of fine and long wire and prolonging each sitting until the relief of the pain. I have found the bipolar vaginal current lessen pain markedly both in the acute and the chronic stage. I cannot see the advantage of intra-uterine application and have not used it.

In the sub-acute and chronic stage, where there are found no fever, no chills, no sweating, no evidences of pus forming, galvanism, the continuous current, has been, in my experience, of the greatest benefit both as to the relief of symptoms, and in the dissipation of the pathological exudate. As regards the many cases in which we are unable to diagnose with certainty the presence of pus, it seems to me that the doubt is not a contraindication to the use of electricity. I have not seen it do harm and other observers bear testimony to the same effect. If pus is present we do not expect as much benefit from the use of electricity, that is all.

Massey in his book on "Electricity in the Diseases of Women," second edition, page 175, says: "The existence of pus in a tube or elsewhere in the pelvic may be a contraindication to this form of electrical application (vaginal galvanism), but if so I have never had evidence of the fact." He cites instances of pyosalpinges relieved by vaginal and intra-uterine galvanism.

Treatment with electricity should not be made use of to the exclusion of the time-honored methods of treatment of pelvic inflammation, for example, hot douches, painting the vaginal vault with Churchill's tincture of iodine, and glycerine tampons. I have seen the best results where electricity has been combined with those measures.

The action of the galvanic current on the tissues through which it passes may be divided into two parts, the polar, and the interpolar. At the negative pole, if the metal of the electrode is brought into direct contact with the tissues and a high intensity used, a soft, easily bleeding eschar is formed; hydrogen gas, set free by the electrolytic effect of the current on the water, and alkalies, probably the alkaline bases, liberated from combination with acid molecular, gather here. At the positive pole the eschar formed is dry and non-hemorrhagic, and oxygen gas and acids collect.

The foregoing points can be demonstrated as facts. As to the interpolar action, namely, what takes place in the rest of the tissues traversed by the current we are dependent on theory. It is supposable that the laws that govern the phenomena of the electrolysis of inorganic compounds, hold with reference to the chemically more complex organic compounds of the body tissues. We lack the proof. That electricity should resolve exudates of low vitality and promote nutrition of tissues of high vitality at one and the same time does not appear to me to be an inconsistency. It is probable that the phenomena of electrical osmosis—the passage of fluid through porous material in the direction of the current, from the positive to the negative pole, plays a part in the action of the galvanic current in removing plastic and serous infiltrations.

The form of electrical treatment that commends itself most strongly consists in the application of moderate intensities, from 25 to 75 milliamperes, vaginal rather than intra-uterine, and for periods of time varying from five to ten minutes at a sitting; the sittings to be held twice a week or even every other day

according to the tolerance in the given case. After a preliminary application or two of perhaps 25°, it is my aim to use a progressively higher intensity that causes not more than an easily endurable amount of pain.

With vaginal galvano-puncture for pelvic inflammations in the stage of infiltration, as practised and recommended by Apostoli, I have had no experience. To my mind the puncture adds an unnecessary risk to the treatment, the risk that attends any surgical procedure of the same character in structures already in a state of inflammation, and this, for me, overbalances the advantage derived from bringing the electricity in more intimate contact with the exudate. As for draining pus-tubes and abscesses by vaginal galvano-puncture, I consider it bad surgery. If an opening is necessary it should be of sufficient size and made according to surgical principles.

Let us now run over the steps in the treatment of a case of non-acute pelvic inflammation. The operator should be provided with a good battery or source of a sufficiently strong current. Anything from a portable battery giving a voltage of 50 to the Edison 110 volt incandescent current will answer. He must have a current controller or rheostat, a milliamperé-meter and three electrodes, an abdominal dispersing, a vaginal, and an intra-uterine. Suppose that for battery he has one composed of from 40 to 60 Law cells, for rheostat the Bailey, for milliamperémeter the MacIntosh, for dispersing electrode the Goelet clay, for vaginal electrode the carbon or brass ball covered with clay, absorbent cotton and gauze, and for intra-uterine electrode a two and one-half inch tip of block-tin at the end of a hard rubber handle.

The patient should be on a suitable table or raised couch, on her back with knees flexed. Exceptional cases can be better treated in the Sim's position. If the treatment is to be intra-uterine she should have a small vaginal douche of corrosive (1 to 5,000), or the vagina should be thoroughly swabbed with cotton soaked in the corrosive solution. The internal electrode should be surgically clean.

First test the apparatus. For this purpose connect the negative (zinc) pole of the battery with the meter by means of an insulated conducting cord, and the meter with the abdominal dispersing electrode with another cord. With a third cord connect the positive (carbon) pole of the battery with the rheostat and the rheostat with the vaginal or intra-uterine electrode by means of a fourth cord. See that the plates of the rheostat are raised so that they do not touch the water. Bring the abdominal and vaginal electrodes in contact, that is, short circuit the battery. Turn the handle of the rheostat until the plates touch the water, and note the behavior of the needle of the meter as you raise or lower the plates. If you are satisfied that the current is passing steadily and that you have perfect control over it, bring the rheostat back to the condition of greatest resistance by raising the plates and break the circuit by separating the electrodes.

Having thus tested the apparatus the operator is ready to begin the application. Apply the clay electrode, previously well soaked in water and warmed, to the abdomen, its lower edge being at the symphysis pubis. Disconnect the vaginal electrode from its conducting cord and introduce it by hooking back the perineum with the forefinger of the left hand, or, if the introitus is tight, pass a Goelet speculum, and,

pressing strongly backward slide the ball tip along it into the vagina. The tip, by the way, should be an inch in diameter to prevent injury to the vagina from the caustic effect of the electricity at the active pole. It should rest at the point nearest to the inflammatory effusion. The intra-uterine electrode is introduced by locating the os uteri with the left forefinger and passing the point along the finger until it enters the os. Now take a final glance at the rheostat to make sure it is in a position of greatest resistance, and connect the conducting cord with the internal electrode. Note the exact time on your watch. Hold the internal electrode with the left hand while the handle of the rheostat is turned with the other. It is well to have the patient place one of her hands on the clay to improve the contact with the skin of the abdomen.

Keep an eye on the milliampercô-meter and on the patient's face. For the first dose, 25° to 35°, positive, for five minutes is generally sufficient. After two or three applications, you can change to negative in the vagina, and gradually increase the dose according to the toleration to 70° or 100°. The positive pole is used in the beginning because it is less painful than the negative. It is seldom necessary to prolong the treatment more than ten minutes. Five minutes is a good average. Increase and decrease the current slowly, using a minute of the five for this. Disconnect the internal electrode before removing it. The treatment may be given twice a week or oftener.

When an endometritis accompanies the pelvic inflammation, as it often does, it is well to make the treatment intra-uterine after tolerance has been acquired by vaginal applications. The positive pole, intra-uterine, is especially indicated when there is a tendency to flowing. Should there be excessive pain as a feature in the case, the faradic current from a coil of fine and long wire applied with the bipolar vaginal electrode, using as strong a current as the patient can bear, and for a period of time until the cessation of the pain, will be found to be of great service.

I want to emphasize the importance of beginning electrical treatments with mild currents. Aside from the need of this caution from a strictly medical point of view, this is the age of the deadly trolley-wire and electrocutions, and the man on the Common, who dispenses painful shocks of faradism for ten cents, adds his mite to a widespread dread of electricity. Two patients out of three are prejudiced against it. It is necessary to show them that electricity is not the awful agent they supposed.

With your permission, I will read a few cases illustrative of this method of treatment.

CASE I. E. F. R., forty years old; married eighteen years, widow five years; two children, twenty-two and twenty years of age; one doubtful abortion. Was referred to the electro-therapeutical department at the Free Hospital for Women, by Dr. W. H. Baker in March, 1891. She had been examined under ether in that institution by Dr. Baker February 26, 1891, and the diagnosis made of old tube on the left side, size of a small lemon, sub-involution of uterus and retroversion with adhesions. Her chief complaint was pain in the left groin. She was easily tired; never very strong since the birth of her first child. Both labors were instrumental. Four years previously she had had an operation for lacerated cervix and for two years she felt better. For the last two years had felt as bad as

ever. Catamenia regular; painful of late, obliging her to keep her bed. Flow increased in amount to ten napkins, formerly three to four.

March 7th when I first saw her I found the uterus in the second degree of retroversion; not freely movable; a mass behind and to the left, size of a small orange. Endometritis and a long anterior lip to the cervix, the result of a trachelorrhaphy performed two years before. The uterine canal measured three and one-quarter inches. There was no especial sensitiveness. A beginning was made with negative vaginal galvanism on that day (March 7th). She had 30°, negative, six minutes. March 11th, 30°, negative, five minutes, and March 14th, 40°, negative, five minutes. March 18th, the intra-uterine electrode was passed to the fundus, and a current of 40°, negative, was given for five minutes. This treatment caused considerable pain, both at the time of the application and on the two days following, so on March 21st, I introduced the bipolar intra-uterine electrode and administered faradism to the point of toleration, from a small Gaiffe battery. Eight minutes was the length of the treatment. She had no more pain, and the catamenia came on two days ahead of time. There was the usual amount of pain with the flow, but the pain in the left groin had disappeared and did not return.

April 1st, she had 50°, positive, six minutes, intra-uterine; and April 8th, 55°, positive, four minutes, intra-uterine. Subsequently, she was given two negative treatments of 35°, for from five to seven minutes.

May 6th, two months after the first treatment, having had eight galvanic and one faradic application, the mass on the left side had entirely disappeared and there was left only a slight thickening in the broad ligament on that side. I was able to replace the uterus bimanually, and she was advised to have a pessary fitted. She then passed from under my observation.

CASE II. E. A. H., widow, forty-four years old, was referred to me for electrical treatment from the indoor department at the Free Hospital for Women, in April, 1891. She had been examined under ether in the hospital March 17th previously, by Dr. F. H. Davenport, who made the diagnosis of endometritis, old tube or enlarged ovary on the left side size of a small lime, a hard and adherent retroverted uterus. He curedtted her for the endometritis at this time.

She was a thin, nervous woman, a hard worker at her profession, that of a masseuse. Her mother died of cancer of the breast; in other respects the family history was negative. She had had five children, whose ages ranged between twenty-three and fourteen years, and seven abortions, most of them induced. She had suffered for many years from leucorrhœa, which for the last two months had been thick and yellow and of a bad odor. She had been in poor health for three months since an attack of acute pain in the left lower abdomen coming on at the time of menstruation. Her chief complaint was pain in the left groin that had persisted since the above-mentioned attack. She had lost some twenty pounds in weight, was nervous and tired; appetite poor, and bowels constipated. The catamenia, usually painless, had been very painful during the preceding three months. There was no excessive flowing.

April 8th I saw her first, and confirmed Dr. Davenport's diagnosis. The abdominal walls being then very lax, I was able to palpate the enlarged ovary or

tube on the left side distinctly, the fundus uteri was in the second degree of retroversion and sensitive to gentle pressure in the cul-de-sac. It was firmly glued in place by adhesions. There was an abundant mucoid discharge issuing from the lacerated cervix. On account of her occupation she was unable to take treatment regularly.

During the six months from April to October, she had eighteen applications of intra-uterine galvanism, from forty to fifty milliamperes at a sitting; eleven were negative, and seven positive. There was marked benefit from the first treatment. She was able to do more work and felt better in every way. In a month the leucorrhœa had ceased. In spite of the fact that she worked incessantly, was on her feet a large share of the time, and in addition had two severe colds, she improved in general strength, and got rid of her pain completely.

June 3d, I noted that the ovary or tube on the left was smaller, the uterus more movable and less sensitive to vaginal pressure.

August 22d, the ovary or tube was still smaller, and thickening in the broad ligaments was the only representative of past inflammatory action.

October 28th, the thickening had entirely disappeared; there was no enlargement of tube or ovary to be felt, and the conditions for examination were as favorable as at the first examination six months before. The uterus was apparently replaceable, but as there was a vestige of the tenderness in the cul-de-sac on deep pressure, it seemed best to advise packing before replacing and adjusting a support. She was referred to one of the out-patient surgeons of the hospital with this end in view.

January 27, 1892, she reported to me that she had felt so well that she had not thought it worth while to have the uterus replaced. She had gained twenty-two pounds in weight since September, her catamenia had been regular and painless, she had had no leucorrhœa and no pain in the groin, and had not felt so well for ten years.

During February I saw her again, and physical examination showed the same condition of the pelvic organs as in October.

The result here can fairly be attributed to electricity, as she had no other treatment beside occasional hot douches.

I will not try your patience by reading more cases. The two I have read will serve as fair samples of a large class of cases that every gynecologist meets. Subacute and chronic pelvic inflammation are among the most important factors in uterine disease. The detection of their presence and their proper treatment are of the greatest moment to the patient and may avert years of suffering. If electricity is a valuable therapeutic agent in these affections, and of that there is not the least doubt in my mind, it should not be neglected because for its application there are required special apparatus and a working-knowledge of electrophysics.

Effie. — That is the new doctor, and those are his children.

Maud. — How ugly his children are!

Effie. — Well, naturally! Of course, doctors have got to keep the ugly ones themselves, you know.

— *Punch.*

Clinical Department.

REPORT OF A CASE OF PURULENT SALPIN-GITIS.¹

BY GERTRUDE W. VAN PELT, M.D.

MRS. B., twenty years of age, octoroon, came for treatment in June, 1891, because she had never menstruated. She had been married two years, and was anxious to become pregnant.

Family History. — She is the youngest of twelve children. Her sisters all menstruated regularly. One sister is said to have died of quick consumption, after a cold taken during her first menstrual period. With this exception there is no possible history of tuberculosis in the family. Father died of some heart trouble, mother of cancer of the uterus.

Patient had always been well until five years before, when she began to have attacks of pain in the back, dizziness and nose-bleed, which attacks came about every four weeks. For a time after marriage, she was better of all her symptoms, but for a year they had been present again, and were increasing. Moreover, she was losing flesh and strength.

On examination uterus was found in good position, with a depth of two and one-fourth inches; ovaries were not found. She had some leucorrhœa. Diagnosis made was, endocervicitis — probable endometritis — undeveloped uterus.

She was treated twice with the galvanic current, the negative pole being within the uterus, with a current strength of 25 milliamperes. These caused pain for a few days each time; and on the 20th of the month — the date she usually had her unpleasant symptoms — there was severe pain, which lasted several days. She was confined to her bed; and for her relief, hot douches, poultices, morphine, and applications of iodine were necessary. Also in the left cul-de-sac could be felt a rounded mass, about two and one-half centimetres long, which was very sensitive to pressure. All these symptoms, however, gradually subsided, and the mass became much smaller, and was only slightly sensitive. She then received one treatment of faradism, with a bipolar intra-uterine electrode, and a few days later, which was about the 20th of the following month, she had a slight discharge of blood for the first time in her life, and she had no nose-bleed, no unpleasant symptoms and was feeling very well. The faradic current was used six times during the next four months. She continued well, and the depth of the uterus increased to two and one-half inches. There was no flow again at the menstrual epochs, but less pain and general disturbance than formerly.

During all this time the mass in the left cul-de-sac did not entirely disappear, but it was very small, and gave no trouble. Suddenly, at one of the menstrual epochs, the pain became very severe, and the mass in the left cul-de-sac increased in size and became extremely tender. All symptoms steadily increased until she was operated upon, seven weeks later. At the menstrual epoch passed during this period, there was a sudden increase in the tumor, and an aggravation of symptoms. She grew very weak, had fever, tongue brown, and anorexia.

Dr. Cushing performed the operation at the Charity Club Hospital on January 17th, and although the

¹ Read before the Section for Obstetrics and Gynecology of the Suffolk District Medical Society, March 9, 1892.

tumor was found to contain enormous quantities of pus, and the patient was in so poor a condition, she has scarcely had a pain since, and has steadily gained.

After the operation it was learned that the husband had had gonorrhœa before marriage, but had supposed he was cured. Dr. Dexter very kindly examined the pus for gonococci, but they were not found.

The specimen is preserved in chloral, three ounces to one-half pint each of water and glycerine, which has kept very nicely the relative hardness of the different parts. The tube at the inner third is hypertrophied and hardened, looked comparatively bloodless when fresh, and the lumen is very small. The external two-thirds is soft and uniformly distended. There was pus within the tube. The mass behind and below it, which I suppose to be hypertrophied and degenerated ovarian tissue, is riddled with abscesses. On the right side the lumen of the tube is so small, that I have been unable to pass anything through it, and the ovary has numerous small serous cysts.

I suppose there is little if any doubt of the cause of the inflammation in this case, especially as there is a history of infection. The interesting questions unanswered, are: Was there any condition previous to the infection which rendered menstruation impossible? and after infection, by what road did the inflammation travel? Pozzi says, that when the tube and ovary are not fused together, as it were, uniting to form one common abscess, but when the abscess is in the ovary alone, that there has been a previous cystic condition of the ovary, favoring suppuration, by whatever avenue the inflammation may have travelled, whether through the tube, by contiguity of tissue, through adhesions, or by the lymphatics. When there has not been a pre-existing cystic condition of the ovary, he says the inflammation is periovarian. In connection with this statement, the condition of the right ovary seems interesting and suggestive.

I should like very much to have the ideas of the doctors present as to the pathological changes that have taken place.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

(Concluded from No. 23, page 579.)

PIGMENTATION OF THE SKIN CAUSED BY CHRYSAROBIN.

It is known that when chrysarobin ointment is used in the treatment of psoriasis the affected parts of the skin appear white, whilst the surrounding healthy skin appears yellowish-red. Campana⁹ examined portions of the skin microscopically and found that the pigmentation in the surrounding skin was caused by the deposit of numerous blackish-yellow particles of chrysarobin within and between the epithelial cells in the basic layer of the horny epidermis.

TREATMENT OF HICCOUGH.¹⁰

Hiccup is sometimes a very troublesome symptom, and in some cases may be difficult to overcome. Leloir, in a case of a child twelve years old suffering from

persistent hiccup, applied digital pressure for three minutes to the left phrenic, between the two attachments of the sterno-mastoid; the hiccup stopped and did not recur. He has since used the method in a large number of cases, and always with success; in some cases pressure for a few seconds has been sufficient, in others a few minutes.

SUBCUTANEOUS INJECTION OF SALT SOLUTION IN DIARRHOEAL COLLAPSE.¹¹

Demieville recommends the subcutaneous injection of sterilized salt solution in the collapse produced by acute gastro-enteritis in infants. The apparatus required is simple. The salt solution used is a solution of chloride of sodium (0.6%). As the solution is rapidly cooled by passing through the tubing, it is well to employ a large reservoir, and to be sure that the solution as it leaves the needle is warm. The skin must be thoroughly disinfected, and also the needle and apparatus; the water should be boiled before use.

As to the quantity to be used, a case is related in which a child, aged four and one-half months, received about four ounces; the injections were made into the thighs, and were followed by gentle massage. The patient in the case mentioned appeared to be *in extremis* when the injections were given, but began to improve almost at once, and reaction was established in a few hours. The injection made the child cry, but did not seem to cause much suffering. The good results obtained by this method are believed to be due to the improvement produced in the circulation, especially in that of the nervous centres.

ATROPINE IN ENURESIS.¹²

Dr. Kerley gives an account of a trial with atropia in twelve chronic bed-wetters in the New York Infant Asylum. The ages of the patients ranged from four to ten years. They had been through the usual routine treatment with strychnia, belladonna, etc., without improvement.

They had always been troubled with enuresis; all wet two or three times during the night, and three once or twice during the day in addition to the nocturnal incontinence. The plan of treatment followed was that used by Dr. William Perry Watson. A solution, consisting of one grain of sulphate of atropia to one ounce of distilled water, was ordered; and of this one drop was given for every year of age of the patient, at 4 and 7 p.m. One-half of this quantity was given, however, in each case for the first few days, no unpleasant symptoms followed, and then the full amount was given.

Physiological symptoms were produced in three, but were slight and of no importance. After six weeks of treatment slight improvement was noticed in four,—would go one or two nights in a week without wetting; at the end of the third month these four wet but once or twice a week. Seven were practically well at the end of the fifth month, rarely wetting.

The treatment, however, was continued as before two months longer, when the dose was reduced one-half; this was given two months, and then stopped. It is nine months since the treatment was discontinued, and there had been no return of the trouble. The remaining five, which includes the three girls, showed

⁹ Arch. f. Derm. and Syph., H. 6, 1891.
¹⁰ British Medical Journal, March 12, 1892.

¹¹ Suisse Romande, No. 1, 1892; British Medical Journal, February 26, 1892.

¹² Archives of Pediatrics, No. 88, 1891.

but slight improvement at the end of the fifth month of treatment, wetting nearly every night.

During the next three months the improvement was gradual, and at the end of the eighth month they wet not oftener than twice a week. During the tenth month there was only an occasional wetting. The dose was reduced one-half, and after one year of continuous treatment there was no wetting. The atropia was stopped, and there has been no return of the enuresis in six months. Eighteen months ago there were twelve chronic bed-wetters of the worst order; to-day they are well,—the only medicine used was atropia, given as above.

INJECTIONS OF AMMONIO-CITRATE OF IRON IN CHLOROSIS.¹²

Dr. Alvazzi, of Turin, has successfully treated chlorosis by means of injections of ammonio-citrate of iron. For three months various preparations of iron had been given in considerable doses without benefit, and the patient had become so weak as to be unable to leave her bed. The red corpuscles, which were pale, averaged 4,000,000, per cubic millimetre, and there was slight leucocytosis. As the internal administration of iron had failed, it was determined to try injections of the ammonio-citrate according to the following formula: Ammonio-citrate of iron, grains 17; distilled water and laurel water, one and a quarter drachms each. The injections were given with an ordinary Pravaz's syringe. One-sixth of a grain of the salt was given once a day, the amount being gradually increased till on the ninth day it had reached two grains, still given in one injection. On the sixteenth day, no ill effects having been observed, two injections of two grains each were given each day, and after thirty days the patient was discharged cured. Two or three of the injections were given under the skin, but this having on each occasion caused severe pain, all the others were made into the substance of muscles. The injections were given with strict antiseptic precautions, and were always followed by somewhat vigorous and prolonged massage at the seat of the injection. Pain seldom lasted long, and no abscesses or even swelling followed the injections nor did the temperature rise. When discharged, the red corpuscles had recovered their natural color, and averaged 4,350,000 per cubic millimetre, and the proportion of white corpuscles was normal. The haemoglobin had risen from thirty-five to over ninety-five and the girl's weight had increased from 72 to 84 pounds. Her appearance and general health had improved immensely.

HYDRASTININ IN UTERINE HEMORRHAGE.

Falk, in 1890, showed that hydrastinin acts to diminish the size of the blood-vessels, is not a dangerous drug since it does not affect the heart and is free from any toxic action upon the general system.

Dr. Abel¹³ now gives the result of the successful employment of hydrastinin in his gynaecological clinic. It is, of course, useless to try it in uterine haemorrhage due to polypi, or to carcinoma; its field of usefulness is in another class of cases, such as patients suffering from metritis and parametritis.

It is necessary to give the drug subcutaneously, since, when given by the mouth its action is not satisfactory. Eight to sixteen minima of a ten per cent. solution is

the amount for one injection. Directly after it has been administered the patients complain of a burning pain locally, which does not last long and may be mitigated by cold applications. After some hours there appears at the site of the injection a black and blue area, sometimes as large as a half-dollar, now and then much larger, which disappears slowly and there remains an induration which persists for a longer period and for some time the spot is painful to pressure.

Notwithstanding obvious drawbacks Dr. Abel recommends its use. It has been used to stop haemorrhage during pregnancy and without the risk of bringing on miscarriage.

Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

(Continued from No. 23, page 586.)

ANNUAL meeting held in Boston, May 31, June 1, and 2, 1892.

WEDNESDAY, SECOND DAY.—MORNING SESSION.

The morning session was given up to a visit to the Massachusetts General Hospital, where a number of interesting cases were shown and the methods of work demonstrated.

AFTERNOON SESSION.

DR. DANDRIDGE, of Cincinnati, read a paper on

THE SURGERY OF THE TONGUE.

The paper was confined to a consideration of operative procedures in malignant disease. Our knowledge of lingual cancer was first reviewed. As a rule, it appears in the form of epithelioma. It runs its course in about a year and a half. In many cases it develops from an indifferent lesion which has been subjected to continued irritation. Neighboring glands are usually affected, and this may occur within three months or not for six or nine months after the appearance of the disease. In ulcerated epithelioma the diagnosis will most often hesitate between that and tubercular and syphilitic ulcer.

The history of operations for cancer of the tongue was then considered and the author expressed his agreement with the following propositions laid down by Treves:

(1) The organ should be removed by cutting with the scissors or knife.

(2) The removal should, as a general rule, be effected through the mouth.

(3) Every means should be taken to reduce the hemorrhage to a minimum.

(4) When the floor of the mouth is involved, or the glands extensively involved, the incision should be carried out through the neck.

The following methods were then described in detail: Whitehead's, Moren's, Baker's, Kocher's and Volkmann's.

Whitehead's. In this operation a gag is used, care being taken to avoid pressing back the jaw and impeding respiration. The patient is in a sitting position. A ligature is passed through the anterior part of the tongue and scissors are used for the section. If the frenum and the anterior pillars of the fauces are completely divided, the tongue can be drawn freely

¹² British Medical Journal, August 29, 1891.

¹³ Berliner Klin. Woch., No. 3, 1892.

from the mouth. The organ is then separated by free cuts with the scissors until the main artery is reached. This is seized with forceps before division. Before completely severing the tongue, it is desirable to pass a loop of silk through the glosso-epiglottidian fold, in case it may become necessary to make traction on the posterior floor of the mouth. The parts are then rendered as aseptic as possible by swabbing over with 1:1000 biniodide of mercury solution, and painted with iodoform styptic solution — Friar's balsam, in which the spirits are substituted by a concentrated solution of iodoform in ether, one part in ten of turpentine having been added to the ether. This varnish is repeated daily. The patient is not kept in bed but encouraged to go in the open air. Whitehead has reported 104 cases of total removal of the tongue by this method, with 20 deaths, or 19.20%. Of 61 patients, 15 survived the operation one year, four, two years, three, three years, four, five years, and one, six years.

Baker's operation. In this operation two threads are passed half an inch from the median line of the tongue on each side. The attachments of the tongue on the side are divided with scissors, keeping close to the lower jaw. The mucous membrane is next divided along the median line and the two halves of the tongue separated by the finger. The diseased half of the tongue is then removed with the cecraser. After this, glands should be searched for and removed either from the floor of the mouth or by external incision.

Kocher's operation has been commended in cases in which the floor of the mouth and the sub-axillary glands are involved, but is too serious an operation for cases where the disease is confined to the tongue. Tracheotomy is first done and the fauces plugged. An incision is then made along the anterior border of the sterno-mastoid muscle. From the first, an incision is made from the middle of the sterno-mastoid muscle to the hyoid bone, and along the anterior border of the digastric to the jaw. The flap is turned up and the facial artery and vein and the lingual artery tied. The sub-axillary fossa is then completely cleaned out. The attachments of the tongue are now divided, and it is drawn through the opening and removed, either in part or in whole, by scissors or galvano-cautery. If the whole tongue is removed, the lingual artery of the opposite side must be ligated through a separate incision. The tracheotomy tube is allowed to remain and the wound is kept packed with gauze soaked in carbolic acid solution. This is changed twice a day, at which times food is given. In fourteen cases thus operated on there was only one death.

Volkmann's method has been attended with extraordinary success, there having been only two deaths in ninety-one operations. The patient is seated in a chair. If the tongue can be brought forward a resection is made with knife or scissors and the mucous membrane brought together, or if a strip of healthy tongue is left it is turned around so as to make a short broad organ. If the disease is too extensive to admit of this method, a traction thread is passed through the tongue and it is drawn forward. The canine or first molar tooth is extracted and an incision made downward from the corner of the mouth and the lower jaw divided. The portions of bone are separated, and the attachments of the tongue divided. The cut surfaces are covered with mucous membrane and the bone wired. A drainage-tube is placed in the tonsillar fossa and brought out at the lower portion of the incision.

In the after-treatment of removal of the tongue for cancer, the three great factors are: (1st) let the patient be well fed; (2d) let all discharges escape from the mouth; (3d) keep the cavity of the mouth sweet and clean.

The author next referred to the palliative treatment to be employed in cases where operation was not indicated, or where the patient refused surgical interference. For the pain a powder consisting of, iodoform (one grain), morphine (one-sixth to one-half a grain), and borax (three grains), has been recommended applied directly to the painful spot. Cocaine has naturally been resorted to either by application to the surface or by hypodermic injection, but there is danger of the establishment of the cocaine habit. The excision of a portion of the lingual nerve was highly recommended, but the relief thus afforded may be only temporary. For the relief of salivation and fetor, various antiseptic mouth-washes may be employed. Where there is difficulty in swallowing, on account of the pain, relief may be afforded by painting the surface freely with cocaine just before the administration of food, or a soft rubber tube may be passed into the esophagus.

The following conclusions were considered justified:

- (1) Sufficient experience has been accumulated to show that the removal of cancer of the tongue prolongs life and adds to the comfort of the patient and further affords a reasonable hope of a permanent cure.
- (2) All operations should be preceded by an effort to secure thorough disinfection of the mouth and teeth.
- (3) In the treatment of continued ulcers and sores on the tongue, caustics are to be avoided and all sources of irritation removed.

(4) Persistent sores on the tongue should be freely removed by knife or scissors, if they resist treatment.

(5) When the disease is confined to the tongue, Whitehead's operation should be employed for its removal.

(6) In this operation, the advantage of preliminary ligation of the lingual artery is not definitely settled, but the weight of authority is against its necessity.

(7) The advantage of leaving one-half the tongue in unilateral disease, must be considered undetermined, but the weight of positive experience is in its favor. In splitting the tongue into lateral halves, Baker's method of tearing through the raphe should always be employed.

(8) A preliminary tracheotomy adds an unnecessary element of danger in the removal of the tongue in ordinary cases.

(9) When the floor of the mouth has become involved, or the glands are enlarged, Kocher's operation should be employed, omitting the spray and preliminary tracheotomy.

(10) Removal of the glands by a separate incision after the removal of the tongue, must be considered insufficient.

(11) Volkmann's method still rests on individual experience. Its just value cannot be determined until it has been subjected to trial by a number of surgeons.

(12) Thorough and complete removal should be the aim of all operations, whether for limited or extensive disease.

(13) By whatever method the tongue is removed, the patient should be up and out of bed at the earliest possible moment, and should be generously fed.

DR. D. W. CHEEVER, of Boston, referred to the

question of diagnosis of ulcers of the tongue. In the first place we have dyspeptic ulcers. These appear in successive crops. They are not indurated, and can be made to heal by simple treatment. Secondly we have the syphilitic ulcers. Previous history is at times of service. In doubtful cases two weeks of anti-syphilitic treatment should be employed. Third, lupus or tubercular disease. This is not so common as cancer. The test of the examination for the bacillus is not always successful. The tubercular ulcers form and reform; some heal and leave scars. Cancer does not heal, but goes on extending. In lupus the sublingual and submaxillary glands are early infected. True cancer is almost always at the side of the tongue; the infection of the glands is usually speedy.

While he advised removal of enlarged glands, he did not think that the neck should be treated at the axilla. As to duration, he thought that malignant affections of the mucous membranes are more speedy in their recurrence than malignant affections in the skin and glandular structures. In cancer of the tongue the disease, as a rule, recurs in four to six months. In simple cancer of the tongue without gland involvement, preliminary tracheotomy is not needed. He operates with the patient in the sitting position, and not thoroughly etherized. He had never tied the lingual artery for cancer. Partial amputation of the tongue, where the disease is limited, seems to have been as successful as the total removal. Recurrence is almost always in the glands and rarely in the stump. Reference was also made to the remarkable recovery of the power of talking in cases when the tongue was completely removed.

DR. L. McLANE TIFFANY, of Baltimore, said that, in considering the operative interference, we should distinguish between cases where the disease involved the anterior portion of the tongue and where the disease has begun more or less posteriorly and there is glandular involvement. In the latter case he prefers division of the lower jaw, either at the symphysis or at the side. He thought it wise to remove the glands beneath the tongue, even if not enlarged. In this way we get rid of one of the routes of systemic infection. Where the posterior portion of the tongue is involved, permanent recovery is rare; where the glands are involved, it is still more rare. He had obtained his best results where he had divided the jaw and secured drainage from below. The incision is not closed, and ample opportunity for drainage is provided. The operation is done with the patient on the side and the head near the edge of the table, full anesthesia with chloroform being employed. Where the tongue is excised for tubercular ulceration, the ulcer rarely recurs although the general tubercular disease may progress.

DR. T. F. PREWITT, of St. Louis, remarked that the solution of the operation depended largely upon the extent and location of the disease of the tongue. Where the cancer is limited to the tongue, an operation through the mouth is sufficient. If the floor of the mouth be involved and the disease extend out to the bones, something more is needed. In one or two instances he had resected portions of the jaw. He did not think that the primary hemorrhage was to be dreaded, but he had seen death from secondary hemorrhage in a case of diseased arteries.

DR. W. H. CARMALT, of Philadelphia, had found a great deal of advantage from preliminary tracheotomy. The most frequent cause of death after oper-

ation is septic pneumonia from the inhalation of infective material. Tracheotomy not only facilitates operation, but it obviates the danger of septic pneumonia. In his last case he had operated, doing tracheotomy and packing the fauces. The patient did well. At the end of four days he removed the tracheal tube and allowed the patient to breath by the mouth. The next day the temperature was up to 102°. The tube was immediately reintroduced and the fauces packed, and in twenty-four hours the temperature was again normal. In cases where the glands are involved, he advised the Kocher operation. In regard to after-treatment, he had found that patients bear the presence of the esophageal tube better than its reintroduction.

DR. R. F. WEIR, New York, had removed the tongue five times by the Whitehead operation and five times by the Kocher operation, and had removed one-half the tongue ten times by Whitehead's operation. Where the floor of the mouth or the glands are involved, he prefers Kocher's operation. He considered it good surgery, where there were signs of glandular enlargement in the submaxillary spare, to cut down in front of and behind the sterno-mastoid muscle and examine the condition of the lymphatic glands in this situation. In the Kocher operation he prefers tracheotomy, and does it a few days before if there is sufficient time. He considers it a great advantage, both at the time of operation and afterwards.

DR. A. G. GERSTER, New York, had extirpated the tongue in various ways in nineteen cases. He thought that the more thorough and radical the operation the better were the results. He advocated removal of the affected glands and the use of tracheotomy. This enables the operation to be more thoroughly done, and with more comfort to the surgeon and less danger to the patient. In this region, as in every other region of the body, thorough operation requires thorough anaesthesia.

DR. T. J. DUNOTT, of Harrisburgh, reported a case where the tongue was greatly enlarged, and protruded from the mouth. The operation was done several years ago, and the patient is still living and well.

DR. JOS. RANSOHOFF, Cincinnati, reported one case on which he operated by the Mordant Baker method four and one-half years ago, and there had been no relapse. In other cases on which he had operated, he had not obtained the same success. In every case where he did not do a Kocher operation he made an incision in the submaxillary triangle, in order to put in a large drainage-tube reaching to the floor of the mouth. This opening gives an opportunity for the examination of the glands. If there is enlargement, the gland can be turned out or the incision enlarged if necessary.

CONDITIONS DEMANDING EXCISION OF THE GLOBE OF THE EYE,

by DR. W. H. CARMALT, New Haven, Conn.

As a rule, the question of the propriety of enucleating an eye will be referred to the specialist, but there are cases of emergency in which the general surgeon is called upon to act promptly. In the consideration of this subject we are at once confronted with it from two different standpoints, according as we have to deal with blind eyes or with those in which there is a more or less useful degree of vision.

In the case of blind eyes the objections to the operation are two, (1) the danger of the operation *per se*,

and (2) the cosmetic appearance. Meningitis has occurred in some cases operated on in the acute stage of suppurative panophthalmitis. In these cases, the removal should be made as soon as the evidences of suppuration are unmistakable. In cases of lacerated or penetrating wounds with loss of vision, the operation is better done before suppuration occurs, or as soon as the evidences of suppuration are sufficiently plain. There is no one condition for which eyes are so frequently excised as in sympathetic ophthalmia (threatened or actual). The pathology of the sympathetic process is still a matter of controversy. In a case presenting the irritative symptoms indicating the beginning of sympathetic ophthalmia, with the other eye lost from injury, or certain forms of disease yet to be mentioned, it is the duty of the surgeon to advise in the most unqualified manner, the enucleation of the blind eye. The irritative stage is usually short. It is more or less rapidly followed by diminution of vision due to an organic lesion. In the acutely inflammatory stage of the sympathetic disease, the removal of the "excitor" is not so beneficial to the "sympathizer," and may be harmful, adding fuel to an already flaming fire. In these cases the operation should be postponed until the active process is subdued. It must also be remembered that in a small number (perhaps about ten per cent.), the sympathetic inflammation may come on after the removal of the excitor; and in about two per cent. it has been thought to have been the result of operation. The conditions liable to give rise to sympathetic ophthalmia are (1) injuries, (2) diseases. Injuries: (a) lacerating or perforating wounds, so severe that the result will inevitably be atrophy of the globe; (b) the lodgement of a foreign body in the interior of the globe; (c) a penetrating wound involving ciliary region. Diseases: (a) recurring or chronic irido-chorioiditis from whatever cause; (b) atrophy of globe following purulent keratitis or panophthalmitis, or in which ossific degeneration of the retina has taken place; (c) atrophy of the globe from any cause with painful ciliary region. Time does not confer immunity against sympathetic disease. There is considerable difference as to liability to the disease in the various injuries and diseases. This sequence is more frequent after injuries than after non-traumatic diseases; and of injuries nothing is so potent as the lodgement of a foreign body in the eye.

The pain which comes from the intra-ocular pressure of a chronic glaucomatous degeneration is frequently so excessive as to justify the removal of the offending organ, all other treatment having failed.

Various diseases of the eye leave the organ in conditions so inconvenient or repulsive in appearance that the surgeon's aid is sought for purely cosmetic purposes. Are there, however, no procedures that may be substituted and avoid so severe a mutilation? In earlier days of ophthalmology abscission of the anterior segment of the globe was often practised. In this operation more or less evisceration of the contents of the globe take place. As a matter of fact, the result is about the same as after enucleation, and sympathetic ophthalmia may follow the operation. The opinion of the author was decidedly against such risky procedures, enucleation of the misshapen eye, with the introduction of an artificial eye, is the only admissible operation. The modern expedient of tattooing a white cicatrix of the cornea without staphyloma has resulted in sympathetic disease.

The enucleation of blind eyes that are the seat of phosphenes, like many other operations undertaken to relieve a symptom of nerve irritation, is of doubtful utility.

In regard to the enucleation of eyes only partially blind, it goes without saying that a condition of things which can allow it to be seriously contemplated must apply with greater force to eyes already blind. The chances of accident or independent disease to the remaining eye are sufficiently great to justify the statement that nothing short of the certainty of ultimate blindness to both, or of death, can permit one to consider such a procedure.

Most of the intra-ocular tumors are sufficiently dangerous to life to demand the removal of the organ in which they are contained as the only hope that can be entertained of successfully combating their encroachment. They are of two classes, the granulomata and the sarcomata.

The extra-ocular growths are of greater variety of histological structure. In sarcomata of the orbit, removal of the globe is often required, even when not implicated in the disease.

Should an eye which retains an appreciable degree of vision be removed in order to arrest a threatened or prospective attack of sympathetic disease in the fellow? It is certainly unjustifiable to remove an injured but still-seeing eye, though it may be an excitor of sympathetic disease. The result of the operation has not been sufficiently successful, in averting the progress of the malady after it has begun, to warrant its recommendation. The only condition in which it was considered justifiable to remove a still-seeing eye for sympathetic disease, is where a foreign body remains in the eye. In these cases sympathetic disease is very apt to follow.

EXECUTIVE SESSION.

The following officers were elected: President, Dr. N. Senn, of Chicago; Vice-Presidents, Dr. W. W. Keen, of Philadelphia, and Dr. Chas. B. Porter, of Boston; Secretary, Dr. J. R. Weist, of Richmond, Ind.; Treasurer, Dr. John B. Roberts, of Philadelphia; Recorder, Dr. J. Ewing Mears, of Philadelphia; Members of Council, Dr. Roswell Park, of Buffalo, and Dr. R. F. Weir, of New York. Member of the Executive Committee of the Congress of American Physicians and Surgeons, Dr. L. McLane Tiffany, of Baltimore — Alternate, Dr. James McCann, of Pittsburgh.

It was decided to hold the next meeting in Buffalo, in May, 1893, and Dr. Roswell Park was elected Chairman of the Committee of Arrangements.

The following were elected to membership: Dr. John B. Deaver, Philadelphia; Dr. Frederick H. Gershoff, Portland Me.; Dr. Wm. S. Halstead, Baltimore, Md.; Dr. Charles B. McBurney, New York, and Dr. Henry R. Wharton, Philadelphia.

THURSDAY, THIRD DAY.

A number of papers were read by title. The morning session was held at the Boston City Hospital, where some interesting cases were shown.

In the afternoon, at the invitation of the President of the Board of Health, the Association inspected the method employed for the disposal of the city sewerage and visited the hospital under the charge of the Board of Charities.

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from No. 23, page 583)

THE Seventh Annual Meeting, held in the Army Medical Museum, Washington, D. C., May 24, 25, and 26, 1892.

FIRST DAY, TUESDAY.—AFTERNOON SESSION.

TREATMENT OF FOLLICULAR TONSILLITIS,

by Dr. G. M. GARLAND, of Boston, was read by title.

A BRIEF SUMMARY OF THE CLINICAL HISTORY AND TREATMENT OF 2,012 CASES OF ALCOHOLISM, OF WHICH 87 WERE MANIACAL,

by THOMAS S. LATIMER, of Baltimore.

No attempt is made to discuss the pathology of alcoholism, nor any of the symptoms, except those directly connected with debauch in the habitual drinker. Nearly all of these patients were arrested for drunkenness and disorderly conduct. They were all drunk when arrested, and many of them had not yet become sober when brought to jail. They were cases of almost continuous drunkenness, culminating at short intervals in a severe debauch, leading to some act of violence or to a condition of drunken stupor. All used some form of alcohol when obtainable, but many were habituated to the use of other intoxicants such as chloral, opium and cocaine. There were only two deaths. One of these was a patient who was brought in in a condition of alcoholic coma and died before I saw him. The second case died from the effects of a fall.

No distilled or fermented drink was given in any one of these cases. No drug but the bromide of potassium, except in a few cases where great cardiac weakness prompted the use of tincture digitalis (ten drops) and ammonium carbonate (five grains) or occasionally in very noisy subjects, where morphia (one-fourth of a grain) and atropine one one-hundredth of a grain) were administered hypodermically, at night.

The study of the foregoing cases leads me to the following conclusions:

- (1) That the clinical phenomena attending excesses in the use of alcohol are the direct result of overstimulation, and are not due to the abrupt withdrawal of the stimulus.
- (2) That though ability to swallow and retain stimulants is frequently wanting, the desire for them almost uniformly persists.
- (3) That alcohol in any form or quantity is unnecessary in the treatment of such cases and is usually hurtful.
- (4) That the absolute and immediate withdrawal of alcohol is of the first importance in the treatment of all the symptoms due to its excessive use, even in cases characterized by great feebleness and inability to partake of food.
- (5) That forced feeding is rarely necessary, and is of doubtful utility in most cases.
- (6) That for the protection of the patient no kind of bonds is called for, and, when necessary for the protection of others or for the contents of the room, they injuriously affect the mental state of the patient.

DR. G. M. GARLAND: I would like to ask if vomiting of blood is at all frequent in alcoholism. I have had two cases in my own practice where vomiting of large quantities of blood occurred, and in one case with fatal result. The fatal case was a young man of about twenty-five years of age and of superb physique. He

had been on a debauch for four or five days. He endeavored to stop on a Saturday forenoon and at eleven that night began to vomit blood. He died at ten o'clock the next forenoon. The autopsy revealed no lesion in the alimentary tract.

DR. T. S. LATIMER: I have observed vomiting of blood in but one case, and that was obviously from the throat from retching.

DR. WILLIAM OSLER: Such a case occurred in my practice in Philadelphia. A man who had been on a prolonged debauch had eaten heavily and taken a great deal of stimulant at his club-house. On his return to his home, at 1.30, he was taken with severe vomiting and hemorrhage of the stomach, from which he died before eight in the morning. I would like to ask Dr. Garland if there was any evidence of liver or portal engorgement in his case, and if the esophageal veins were engorged.

DR. G. M. GARLAND: I do not know about the esophageal veins. Nothing was found in the abdomen.

PRACTICAL RESULTS OF BACTERIOLOGICAL RESEARCHES,

by DR. GEO. M. STERNBERG, Lieutenant-Colonel and Surgeon, U. S. A.

Science does not demand practical results, but investigates for the purpose of establishing facts and explaining phenomena; but medicine is eminently practical in its aims, and practising physicians, as well as intelligent laymen, meet every announcement of a new discovery in pathology with the question, "Does it aid in the care of disease?"

Heretofore, the bacteriologist has been compelled to admit that the discovery of the specific cause in a considerable number of infectious diseases has not resulted in the discovery of a specific treatment for these diseases. But recently experimental evidence has been obtained which gives us reason to believe that in a number of infectious diseases, at least, the toxic bacterial products, which give rise to the morbid phenomena characterizing these diseases, may be neutralized in the infected individuals by the administration of anti-toxines, obtained from the blood of immune animals.

The practical results of bacteriological researches in the field of preventive medicine are also briefly referred to.

The establishment of aseptic surgery on a scientific basis also depends on bacteriological researches relating to the pyogenic micrococci commonly concerned in wound infection. And the treatment of localized infectious processes, when these are accessible to local treatment, has been favorably influenced by the exact knowledge relating to antisепtic and germicidal agents obtained by the researches of bacteriologists.

Reference is made to the recent experimental evidence relating to anti-toxines in the blood of animals which have an acquired immunity against virulent cultures of the bacillus of tetanus, the micrococcus of croupous pneumonia, the bacillus of diphtheria, the bacillus of tuberculosis, and against the virus of rabies; also to the recent experiments of Ehrlich, showing that animals may acquire an immunity against the pathogenic action of certain vegetable toxalbumins—*seria* from the castor-oil bean, and *seria* from the jequirity bean.

Finally, an account is given of experiments recently

made by Dr. Sternberg, in Brooklyn, which show that the blood of a calf which has been vaccinated, and consequently is immune against vaccinia, contains a substance which neutralizes the specific virulence of vaccine lymph, either bovine or humanized.

Dr. Sternberg closes his paper by stating that it is his intention to follow up this line of investigation, and to endeavor to isolate the anti-toxine of vaccinia; also to test the question of its possible specific action in neutralizing the small-pox virus in infected individuals before or after the development of the disease.

DR. W. H. WELCH: The most striking results which have been obtained by the application of this method (the use of anti-toxines) are those reported by Italian observers. These reports are open to some doubt. Dr. Kitasato has expressed a great deal of scepticism. He considers, as do other authorities in Berlin, that no positive results have been obtained in the application of the method to human beings. The final experimental results reported by Dr. Sternberg are very interesting, and I congratulate him on his interesting communication.

DR. F. P. KINNICUTT: It is difficult to judge in regard to the reported results of these cases from Italy. The last case, the sixth one, is the fullest and perhaps the most convincing of the reports that have been published. It was a well-developed case of tetanus. The urine on the evening before the inoculation or injection of the anti-toxine of tetanus was injected into a series of five or six guinea-pigs and mice. In all it is claimed that death followed in twenty-four hours with well-marked symptoms of tetanus. On the third day after the injection of twenty-five centigrammes of the anti-toxine, the urine when injected into a series of animals was absolutely without result. The blood also was injected before and after the treatment with the tetanus anti-toxine. Those animals inoculated before, are all claimed to have developed tetanus and died within twenty-four or thirty-six hours. Those inoculated three days afterwards with blood from the same patient, who had shown most marked symptoms of improvement, produced no effect.

Some tetanus anti-toxine is being prepared in the pathological laboratory of the College of Physicians and Surgeons, in New York, and a few of us are very much interested in securing cases of tetanus in which to use it.

DR. V. C. VAUGHAN: I wish to express my high appreciation of Dr. Sternberg's paper, and especially of his own experimental work with regard to vaccine. Of course the number of experiments is too limited yet for positive conclusions to be drawn.

There are many ways in which immunity can be secured, and we must distinguish between producing an immunity and curing the disease. There is no evidence that the two are the same although the Klemperers try to make it appear so in their work. I think the action of Koch's tuberculin should make us a little slow about accepting and drawing positive conclusions from experimental work. Experimental immunity and experimental cure is one thing, and cure in man is another thing.

DR. HENRY M. LYMAN: The results of laboratory experiments have been rather discouraging as showing the transient character of much of the immunity obtained by the inoculations alluded to. Vaccination against small-pox seems to be almost the only case where permanence of immunity is secured.

G. M. STERNBERG: I did not purpose to say that it had been absolutely demonstrated that tetanus could be cured by anti-toxine; I merely reported the cases. Why Dr. Kitasato should be so very conservative about the results obtained upon man when they correspond so entirely with the results which he and others have obtained on the lower animals, I do not understand. I think that the future of scientific medicine is in this direction, and that we have entered upon a field that is to be cultivated vigorously and which will give results that will knock conservatism from under our feet before many years.

I believe that there is something in the blood of the immune calf that neutralizes the vaccine virus. This rests upon very few experiments, but these are so satisfactory and decided that I am thoroughly convinced that I shall get similar results on repeating them.

THE TREATMENT OF EXPERIMENTAL TUBERCULOSIS BY KOCH'S TUBERCULIN, HUNTER'S MODIFICATIONS, AND OTHER PRODUCTS OF THE TUBERCLE BACILLUS.

by E. L. TRUDEAU, Saranac Lake. (Read by W. H. Welch).

The present research has been undertaken with a view to obtaining some more definite evidence,—first, as to the curative effect said to be exercised by Koch's tuberculin over inoculated guinea-pigs; second, as to the curative value and dangers in experimental tuberculosis of the modifications of tuberculin prepared by Hunter.

As the result of carefully conducted experiments with Koch's tuberculin upon guinea-pigs, the details of which are given, Dr. Trudeau has concluded that injections of tuberculin exercise a marked remedial influence on the tubercular lesions of the guinea-pig, and can cure the primary one. But contrary to Koch's belief, they cannot "protect the tissues from further invasions of the germs." For infection in these animals may spread from one point to another, even while a cure of the primary lesions is being effected by the treatment.

Koch, from the first, has insisted that the curative substances are inseparable from those that produce fever and local reaction. Klebs, on the other hand, asserts that he has produced from tuberculin a material entirely free from fever-producing or dangerous effects, capable of destroying the tubercle bacillus in the living bodies of men and animals, and of curing the disease. As yet, however, he has furnished no evidence which can be subjected by others to scientific tests.

Hunter, in a recent communication on the chemical constituents of tuberculin, gives the results which he has attained in producing a modified form of this substance, in terms so clear and concise as to invite other investigators to test his conclusions. As a result of his research, he proposes two modifications which he designates merely as B. and C. B., both of which bring about in lupus certain reparative changes tending to cure but unaccompanied by fever, and each varying greatly in the degree and intensity of the local reaction it produces.

Dr. Trudeau found no difficulty in the manufacture of Hunter's two modifications, and conducted experiments in the same way as in his experiments with tuberculin. From the evidence obtained the following conclusions seem justified: (1) In Hunter's modifications the curative principle of tuberculin has been

retained. This is especially true of modification B. (2) The fever-producing elements have been to a certain extent eliminated, but C B. may favor, rather than hinder, the tendency to generalization. (3) Modification B. is as efficient and safer than either C. B. or crude tuberculin. Thus far Dr. Trudeau's clinical experience with modification B. has confirmed this conclusion.

Experiments were also made with the object of proving whether the remedial principle of tuberculin is to be sought in the bacilli themselves, or in the culture medium in which they have grown. The liquid cultures of the tubercle bacillus were filtered through hardened filter paper. To this filtrate one per cent. of carbolic acid was added to preserve it and it was then ready for use. This fluid contains all the soluble albumoses and toxines, but no bacterio-protein, and nothing which may have been extracted from the bacilli by heat, as in the manipulation for producing Koch's tuberculin.

Bacterio-protein solution was obtained from the mass of bacilli left on the filter paper by the process described in detail.

With these two solutions several sets of tubercular guinea-pigs were treated. Another method of experimentation carried out, was the inoculation of rabbits in the anterior chamber of the eye according to the plan proposed by Cohuheim and Salamonsen and adopted by Baumgarten for the study of tuberculosis.

The conclusions derived from these experiments are:

(1) Solution of bacterio-protein obtained as described, from well washed bacilli have a doubtful, and at best, feeble remedial influence on experimental tuberculosis. (2) They produce suppuration and serious constitutional impairment, which may result in organic disease and death.

(3) The liquid culture medium in which tubercle bacilli have developed, but from which they have been removed by filtration, contains the elements which bring about reaction, and cure, in tubercular tissue.

(4) Experimental tuberculosis in the rabbit's eye can be cured by injections of the filtered culture medium.

(5) The permanancy of such a cure has not yet been established.

DR. KINICUTT: This is one of the most valuable contributions that has yet been made to the subject of Koch's discovery. Dr. Trudeau has certainly made a new departure. The last time when he was in New York, it was agreed that he experimentally, and I clinically, should undertake investigations with the modifications of tuberculin that had been proposed by Dr. Hunter. The preparations were made for both of us in the laboratory of the College of Physicians and Surgeons, and they consisted of the preparations B. and C. B. Since that time, purposely no communication has passed between Dr. Trudeau and myself in regard to the results of our work. We preferred to test individually the correctness or incorrectness of Dr. Hunter's observations and then compare our results and this is the first communication that I have received in regard to Dr. Trudeau's results. As they are entirely experimental it may be interesting to hear what results I have obtained clinically from the use of the same modifications.

The first proposition which Dr. Trudeau inserts in his conclusions is, that Koch's tuberculin does not cure experimental tuberculosis in guinea-pigs, although its specific influence on the primary lesion is indisputable.

My clinical experience of eighteen months has convinced me that tuberculin does contain a remedial principle; that tuberculin is a complex substance and the remedial principle is associated with other substances which are harmful in their nature.

His second proposition is that Hunter's modification C. B. contains less of the remedial preparation than tuberculin and is apparently quite as dangerous.

That same conclusion has been reached by me from clinical study. It not only seems to have less remedial principle but it is a dangerous modification to use. In a single case in my wards in which it was used, after an injection of eight milligrammes was given, an acute apex catarrh was developed which ran a favorable course and terminated at the end of the tenth day. It followed very certainly in consequence of this C. B. preparation.

The third proposition of Dr. Trudeau is that Hunter's modification B. is as efficacious as tuberculin and free from some of its bad effects.

That, too, has been my clinical experience. Dr. Hunter claims that this modification B. is as nearly as possible a pure albumose, that it is free from the alkaloidal substances which he believes to be the harmful properties in the crude tuberculin. The clinical results that have been obtained are as follows: Seven cases of well-marked pulmonary tuberculosis were very critically examined before and throughout their treatment. In two of the cases there has been no appreciable difference in the physical signs of disease during the two or three months that they have been under treatment; although there has been an appreciable difference in the physical condition, which is improved somewhat. In one case the improvement is most marked. In a fourth case the improvement is distinct but not as marked. In the fifth and sixth cases the improvement (and by improvement I mean an improvement in physical signs of disease) has been most marked; and in the seventh case — and it is the only case that I have seen in a pretty large experience in pulmonary tuberculosis — there has positively been an arrest of the disease. The patient, after having presented signs of infiltration at the apex of one lung, anteriorly and posteriorly, with abundant subcrepitation and other signs, is to-day absolutely free from them, and with the exception of impaired resonance he goes out of the hospital as a case of arrested tuberculous disease of the lung.

While these studies are too small to enable us to express a positive opinion as to any specific action which this modification may possess on tuberculous lesions, they are large enough to demonstrate that the modification C. B. has apparently a specific beneficial effect.

In regard to the liquid culture medium — of that Dr. Trudeau alone can speak. It is quite a new departure and certainly the reports that he gives to us are most noteworthy, and it seems to me that in his work more than in that of any one else in this country, we are to look forward to what I believe is certainly to come, that is, a specific remedial treatment of tuberculosis.

It may be interesting to the members of the Association to know that Dr. Trudeau has made some experimental investigations in regard to the alleged specific effect of croesote in experimental tuberculosis. His experiments have not been published but he has very kindly given them to me to publish in connection with some work of my own in this direction.

The summary of his experimental work was, that creosote given in the largest possible dose in guinea-pigs, had absolutely no effect either in controlling the development of experimental tuberculosis or in arresting its progress.

DR. W. H. WELCH: Dr. Trudeau, if here, would doubtless express his gratification with the similarity of Dr. Kinnicutt's results with his own. It seems to me a most gratifying turn in this subject, that it has passed out of newspaper notoriety, and we are getting down now to what we should have had in the beginning,—quiet laboratory work. There is every reason to expect results of practical importance.

Those who are familiar with the literature of the subject know that it has been recently claimed that it is exactly the bacterio-protein that possesses the curative action. Dr. Trudeau has shattered that view conclusively. This is a very gratifying result. It began to look as if the peculiar properties of the tuberculin were not due to the growth of the tubercle bacillus at all but were due to the growth of all sorts of bacilli.

As Dr. Kinnicutt has said, it is impossible to say anything in the way of criticism with regard to the experiments with liquid culture media.

(To be continued.)

MASSACHUSETTS MEDICAL SOCIETY.

THE One Hundred and Eleventh Annual Meeting was held in Boston June 8, 1892, the President, Dr. AMOS H. JOHNSON in the chair.

The report of the Treasurer showed that during the year the total receipts had been \$12,318.63. There is a balance in the treasury of \$10,456.98. The total funds of the Society now amount to \$68,701.

The committee on the subject of making permanent provisions for chronic epileptics reported that the matter had been brought to the attention of the Legislature, but owing to the fact that the subject of an institution for the chronic insane had taken precedence, the committee thought it would be well to defer action for another year. The subject was therefore recommitted to the committee.

DR. F. H. DREW read a paper on

AN OUTBREAK OF TRICHINOSIS IN CLOVERDALE.

Short papers on the subject of trichinosis were read by DR. C. W. MACDONALD and J. H. McCOLLUM.

DRS. H. L. BURRELL and E. W. DWIGHT presented a paper on

THE TREATMENT OF COMPOUND FRACTURES BY MODERN METHODS.

Appliances were shown and patients presented.

DR. S. W. ABBOTT read a paper on

THE REVISION OF THE MEDICAL NOMENCLATURE EMPLOYED IN THE VITAL STATISTICS OF MASSACHUSETTS.

The following resolution was presented and adopted :

That a committee of three be appointed by the President, to report at the next annual meeting of the Society, upon the question whether any changes are necessary in the classification and nomenclature employed in the vital statistics of Massachusetts, the same committee also to report what changes should be made, if any.

The President appointed Drs. C. F. Folsom, S. W. Abbott and F. W. Draper.

THE ANNUAL ORATION¹

was delivered by DR. F. W. DRAPER, of Boston.

The President then introduced the President-elect, DR. J. C. WHITE, of Boston.

THE ANNUAL DINNER

was served at one o'clock, there being about eight hundred Fellows present.

At the close of the dinner, the Anniversary Chairman, DR. E. H. BRADFORD, spoke as follows :

The task of welcome is never a difficult one; it is certainly not so to-day, at this anniversary meeting of our Society.

If there is truth in the old Latin saying, that there is no solitude like the absence of friends, surely there can be no festival like their company. If fellowship and organization give strength to all human institutions, and friendship is the cement of societies, our annual dinner needs no justification or explanation.

We meet each year in obedience to an old and worthy custom, hoping to place ourselves under the influence of collected ideas in the current of fresh thought, seeking the mental stimulus for the coming year. Each time has its new suggestions and problems. The causation and the effects of influenza; the nomenclature of disease; the importance of bacteriological investigations; the value of various surgical interventions; the valuable work in the prevention of disease done by our State Board of Health; the improved methods in the study and teaching of pharmacy and of the sciences of ventilation and drainage; the chemical investigations of air and water; the relation of applied chemistry to cooking,—all these topics have been especially brought to our attention this year, and their importance and value demonstrated.

But now, before we separate, we come together in the character of Fellows, to meet old friends and make new ones, to exchange congratulations for the health and welfare of those we meet of our organizations, and to extend a hearty welcome to our honored guests.

The first sentiment at our annual meeting is one of loyalty to our Society, an organization that has a worthy history and a valuable influence. To-day I have the privilege of presenting to you our new leader, one whom we honor and trust, President White.

DR. J. C. WHITE spoke of the great advances made in medical education since he became a teacher, in 1858. The Harvard Medical School then offered as good opportunities for medical instruction as were to be found anywhere in the country, yet there were only six desks in the school for laboratory work in chemistry, while now there are two spacious laboratories provided. Anatomy was then taught during only four months in the year, and even a part of that time was taken up with physiology, while now the anatomical course covers two years, and a year is devoted to physiology.

Then only a fugitive glance was given to histology, while now there is a laboratory for its study, and embryology is also taught; then a small room in the Massachusetts General Hospital was the only place where autopsies could be seen, now there are two hospitals with amphitheatres specially provided for students.

A new department of bacteriology has been estab-

¹ See page 555 of the Journal.

lished. In the clinical branches there are twenty teachers instead of two or three. Midwifery was then studied by books and lectures, while now a student is required to take charge of at least six cases before he graduates.

To this list of studies ten or more special departments have been added, and the term of study has been extended to four full years. He had no doubt that this advance would exert an important influence, not only in this city, but in other large cities as well.

As our Society owes its charter to the Commonwealth, so we are never to forget our duty as citizens. We are honored to-day, not by the presence of His Excellency, the Governor, who was prevented by the press of official work from joining us, but by his worthy representative, the Surgeon-General of the State, Dr. Kittredge.

The SURGEON-GENERAL, in responding for the State, brought the cordial greeting of the Governor, who was not able to be present on account of the press of official business. He then spoke of the military service of the State, and outlined a proposed extension of the usefulness of the medical staff. The service is of great value to the young practitioner who enters it, teaching him obedience, promptness, activity and other things useful to him in his profession. There have been two ambulance corps established of fifteen men each, one stationed in Lowell and the other in Boston. The corps are to be enlarged to fifty men, and placed at the service of the community at large. The men are trained to render first aid in case of accidents, and are equipped with all needed appliances. The address of every officer and man will be registered, and in case of a railroad accident or other disaster this trained corps can be dispatched at once to the scene to afford immediate help.

It has been said that republics are ungrateful, and that we Americans should do well to kill off our ex-presidents. Perhaps there may be truth in this, but the Massachusetts Medical Society is organized not to kill but to cure, and we all are united and banded to secure health and welfare for our retiring president, Dr. Johnson.

DR. AMOS H. JOHNSON reviewed briefly the changes which have taken place in medical practice since the foundation of the Society, one hundred and eleven years ago; the abandonment of old methods, the era of therapeutic scepticism, and the advantages and disadvantages of modern pharmacy. This Society has taken an active part in the advance of medical science, and has counted among its members several men who have contributed much to medicine.

In introducing our next speaker, I am reminded of an anecdote. Two Boston girls were talking, and one asked the other what kind of a doctor her father was, a homeopath or an allopath. "Oh, he is not that kind of a doctor: he is another kind of a doctor; he is a mugwump."

I have pleasure in introducing to you the original mugwump, Dr. Wm. Everett.¹

The medicine-man was once both a priest and a doctor. I, myself, have met a worthy gentleman who united in his own person at the same time the duties

and responsibilities of both the homeopathic physician of the village and the pastor of the village church. I did not learn whether his theology was homeopathic. We members of the Massachusetts Medical Society are more modest, we are glad to accord honor and welcome to the chaplain of the day, Rev. John Cuckson.

REV. JOHN CUCKSON spoke of the intimate relations existing between physicians and the clergy. Ignorant people should be protected from their own ignorance in medical matters by the State, which should see to it that any one professing to practice medicine is properly qualified.

We all of us respect lawyers, and fear them, when they put us upon the witness-stand and ask us questions in obscure anatomy and of the hypothetical case. You all remember the utterance of one of our honored and gifted members,

"Strong is the moral blister that will draw,
Laid on the conscience of the man of law."

That this is not true we shall learn from the Hon. Fred. Greenhalge.

HON. FREDERICK GREENHALGE, in speaking for the legal profession, entertained the Society with the humorous relations of the two professions. Seriously the medical profession is making advances on every hand. This great Society has a vital function, for it stands as a helper and sponsor for patient labor and investigation, and for the highest professional honor among physicians.

Two years ago the eyes of the medical world were "turned to Berlin." Delegates from all over the world went there, and addresses were made by great leaders in their departments. Billroth, in his address on surgery, referred to one American who had been foremost as a surgeon. We are fortunate in the presence of this surgeon, whose skill and achievements you all know, Dr. William T. Bull.

DR. WILLIAM T. BULL said that he had received his first inspirations in surgery, while an undergraduate in Harvard College, by watching the surgeons of the two Boston Hospitals. There have been established in Massachusetts, with the aid of the Society, some institutions which are superior to anything of the kind in New York. The coroner has been abolished, and his duties placed in the hands of men eminently qualified to discharge them; one of the best medical libraries in the country has been built up, and with it is combined a registry for nurses, which does much to lighten the labor of the physician; the Boston training-schools for nurses have taken a lead, which has made it necessary for New York on several occasions to send to Boston for assistance in founding a school. The requirement of four years in medical study is a movement forward which is being contemplated by Columbia College.

Dr. Holmes once said that performing an autopsy was like inspecting the remains of a fire-work the day after the Fourth of July. One of our honored guests has mastered this subject, and is now ready to speak of the Fourth of July itself, and of the day before. I take pleasure in presenting to you the new Professor of the Theory and Practice of Medicine, Dr. Fitz.²

¹ See Dr. Everett's remarks, on page 598 of the Journal.

² See remarks of Dr. Fitz, on page 599 of the Journal.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION IN OBSTETRICS AND GYNECOLOGY.

DR. GEORGE HAYEN, SECRETARY.

REGULAR Meeting, Wednesday, March 9, 1892,
DR. C. M. GREEN in the chair.

DR. GERTRUDE VAN PELT reported

A CASE OF PURULENT SALPINGITIS.¹

DR. LENA V. INGRAHAM: I have been very much interested in the case. I was present at the operation. I think the specimen does not give an idea of the amount of pus which was present. The sac was so adherent that it seemed probable that some of it was left. I should think fully a pint of very thick pus flowed out over the abdominal wound. We found two small abscesses next to the lumen of the tube near the abdominal end of the tube. On close examination you will see that there are a great many abscesses and it seemed to me that it was possible that there had been a number of foci of inflammation in the ovary from which a number of abscesses started and that the walls of some had broken down and become two or more large abscesses with some smaller ones whose walls are still intact.

DR. BURRAGE read a paper on

THE ELECTRICAL TREATMENT OF PELVIC INFLAMMATION.²

DR. HARE: Personally, I am a strong believer in electricity in these cases. I have had the privilege of seeing many cases, and I have hardly ever failed to see them improve. I have had this winter two cases which were very interesting to me. One was the case of a woman forty years of age, who had an operation upon the cervix and for the cure of hemorrhoids, in May, 1890, and after that was never as well as before—was completely incapacitated from pursuing anything pleasurable in life. The first time I saw her she had on the right side a tube which could be readily felt, the ovary being about double its size and adherent. She had galvanism, in all, eight applications, after which the tenderness which at first was so much as to make examination very painful, had entirely gone and there was nothing whatever to be felt.

The second case dated from a year ago last November, at which time there was an attack of pelvic trouble on the left side which kept her in bed four months, and after getting up she never recovered to the extent that she could walk more than an eighth of a mile without resting and having severe pain. There was a mass on the left side, the size of a small lemon. She had the same treatment for about three months. She has gone home and nothing can be felt. There is no tenderness, and she walks one-half an hour to an hour without any pain whatever.

DR. REYNOLDS: I am very glad that this subject should have been brought up, not only because it is one in which I have been for some time interested, but because it seems to me strange and a reproach to Boston that so powerful a therapeutic agent, and one which is in such general use all over the world, should have been as much neglected as I think it has been here. Personally, I have grown to believe it the most powerful of all the conservative minor gynaecological methods. I think we notice at once, in Dr. Burrage's

paper, what has seemed to me to be characteristic of the writings of all the authorities who advocate the use of electricity in gynecology: careful statements of dosage and of the different therapeutic effects of the different currents, and I think it will be noticed that those who have failed to obtain good results with electricity generally speak of it as electricity *per se*. Considering that there are six to eight different actions of the current, according as it is used, it is evident why one should have good results and another not.

In one particular my experience has differed a little from that of the reader and that is in preferring to use the positive pole in the vagina on account of its being less painful. There is no doubt that the positive pole is sedative, is less painful than the negative, but upon the other hand, the skin of the abdominal wall is more sensitive than the vagina, and it has been my experience that patients complain much more of pain when the positive pole is used internally, that is, when the painful negative pole is external. I prefer to use the negative current internally throughout unless the patient is somewhat profuse at her menstrual periods, or is otherwise losing blood. The effect of the negative current in increasing the flow of blood is as marked as that of the positive in decreasing it. If she is losing too much blood we must use the positive pole; otherwise I prefer the negative. I think a further distinction in the use of the current than I understood the reader to draw is to be made; it is in the careful distinction between the galvanic current of high tension and that of low. So far as I know that distinction has only been emphasized by Englemann. Personally I think it is an important one. I believe use of the current of high tension concentrates the action of the electrical force on the tissues in immediate apposition to the electrode and the use of the current of low tension tends to disseminate it toward more distant tissues. For that reason where we use it for the dispersion of exudates I think it is important to work without a rheostat with large cells with small internal resistance, and to use every effort to decrease the resistance of the patient's body. I have been accustomed to use for an abdominal electrode what I think I very much prefer to the clay—that is the large woven-wire electrodes of Waitt and Bartlett covered by absorbent cotton and wet in warm water. It is not dirty, you can use a fresh surface for each patient, and as far as low resistance goes, I find that with these electrodes I can get a current of from 30 to 40 milliamperes with six or seven bichromate cells.

I think it is important to distinguish in the character of the electrodes used. It is a matter of the most ordinary observation that a metallic electrode cauterizes the surface extensively, while a moist non-metallic pole does not cauterize. I believe that where the metallic electrode is used and extensive cauterizing effect is produced there is far less intrapolar effect on the more distant tissues. That point also was first made I think by Englemann and so far as one can judge from clinical experience I believe it is a strong point. The use of the non-metallic electrode within the uterus presents difficulties. The introduction is difficult except in a pretty patulous uterus, and I have not infrequently been compelled to use the metallic one because I could not without pain and bleeding introduce the cotton-wrapped applicator. Where that can be introduced I think it is of much more value for electrolysis. In vaginal applications there can be no question that the

¹ See page 603 of the Journal.

² See page 600 of the Journal.

cotton-wrapped applicators which Dr. Burrage recommended are preferable.

I think a good deal can often be gained by preceding the galvanic current by the faradic current of high tension for from one to two minutes using a very fine, long coil. That has seemed to me to very much lessen the pain and somewhat lessen the fatigue which often follows these applications, and in that connection I should like to emphasize my belief in what I do not hear Dr. Burrage refer to, the importance of making the patient lie down a considerable length of time after each application of the current. Most patients are considerably tired after the treatment. If they get up out of the chair and at once go home I think they are apt to feel badly worn out the rest of the day and often longer, to feel disgusted with the treatment and not get as much good from it. But if they rest for 15 to 20 minutes after the application they are apt to miss all that tired feeling, to feel, if anything, better through the day, come back with great readiness, and be benefited much more by the treatment.

It is going a little outside of the subject of the paper, but before sitting down I want to add to the general subject of electrical treatment my belief that the galvanic current furnishes by far the best method of treating endometritis and endocervicitis. The application of tincture of iodine, carbolic acid, etc., is very disappointing, and their intra-uterine use not altogether free from danger. There is always the bugbear of driving fluid into the tubes. That won't happen with the electrode. They are unsatisfactory also because the only surface that is opposed to their action is that of the superficial portion of the uterine mucous membrane. The crypts in which the inflammation lurks and which are the source of its resupply are not affected by these chemical agents. When the electrode is passed into the uterus it affects all the surfaces with which the intra-uterine secretions are in contact, by simple electrical conduction. It affects the bottom of the crypts about as much as the uterine surface between them. That is the theoretical ground for believing in its superior efficacy and practically it seems to me a much more satisfactory and hopeful method of treating these inflammations. It is outside of the paper to speak of the faradic current of low tension in subinvolution of the uterus and laxity of the ligaments, etc., but that I believe also to be of much importance.

DR. VAN PELT: I am very much interested in this discussion because I have used this treatment considerably. I spent three winters with Dr. Apostoli, and have treated a number of cases at home. I believe very thoroughly in the application, and have had a great deal of success, I think, in cases that have not been benefited by the ordinary applications. I have not found the same difficulty in using the positive pole that Dr. Reynolds speaks of, and I have thought possibly it is because I use the clay electrode. The patients do not complain of pain over the abdomen. There is a point in connection with the electrodes that I would like to ask Dr. Burrage about, that is, the value of the clay on the outside of the vaginal electrode. I do not understand it.

DR. BURRAGE: I think it is supposed to spread out the current better than absorbent cotton and prevent injury to the vagina. It is a little bit dirty, but if the clay is included in absorbent cotton and then in the gauze, there is not very much chance of its coming

out. I dip the electrode into boiling water each time before applying, and it certainly acts better than coverings of absorbent cotton alone or chamois skin which I used before. With a current of 30 milliamperes I have made a very considerable ulcer in the vagina on several occasions, using a chamois skin covered electrode.

DR. REYNOLDS: I should like to state that for nearly two years I used the clay vaginal electrode prepared as Dr. Burrage has described, but for the last year I have used the cotton. The cotton is cleaner, its action has seemed to me to be in every way as satisfactory, and I have never made an eschar with it, though I once did with the clay.

DR. BURRAGE: In reference to the point Dr. Reynolds brought up about using the positive pole in the vagina, I have found also that it does cause pain in the abdomen if you use the wire-gauze electrode of Waite and Bartlett. I have used that electrode a great deal but with low intensities. With the higher intensities I have been unable to use it because of the irritation of the skin of the abdomen. With the clay I have not found that there is any increase in the amount of pain complained of when using the positive pole.

In reference to the rheostat, I like it better than the collector, although I have used both. There is next to no danger of getting a shock with the rheostat or current controller, and with the collector there is some danger. Now and then one of the cells happens not to be working properly, and as the lever passes over that one there is a shock.

As regards the faradic current preceding the treatment I have not used it in that way, but I have often used it after the treatment to allay pain, and have found it of great service.

As to the matter of patients lying down, at a large out-patient clinic it is a difficult matter to bring about unless you have very commodious quarters. Patients are directed to sit down and rest awhile, but as a rule I think they wait very little. At my office I have them lie down. If they are sensitive I have them wait an hour or two before going away, particularly after the first few treatments.

Recent Literature.

A System of Gynecology. Based upon a translation from the French of SAMUEL POZZI. Revised by CURTIS M. BERKE, M.D., Chicago, Ill. New York: J. B. Flint & Co. 1892.

The value of the original work of Pozzi is attested by the fact that two translations of it should have appeared within a few months of each other. The present one, unfortunately, suffers by comparison with the one edited by Dr. Wells, inasmuch as it is not complete, either in respect to the text or the illustrations. We have no doubt that the most important parts have been retained, still it hardly seems fair to call this Pozzi's System of Gynecology, and by no word of preface to intimate that it is not given entire. The only possible ground on which it can command itself to the profession is that it is somewhat cheaper than the superb two volume edition which we have reviewed earlier.

THE BOSTON
Medical and Surgical Journal.

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THE AMERICAN MEDICAL ASSOCIATION.

THE forty-third annual meeting of the American Medical Association, held at Detroit last week, was as usual largely attended. About eleven hundred doctors from all parts of the country were on hand, and the hotel accommodations of Detroit were taxed to their utmost capacity. The extremely cordial injunction of Gen. R. A. Alger — lately a "dark horse" at Minneapolis — who, paraphrasing the hospitable Spaniards, in his address of welcome, said, "If any of the medical guests did not see what he wanted, he had only to send for it, and if he did see what he wanted, he was to take it," was of little comfort to the late comer.

The city of Detroit is charmingly situated, and everything was done by its inhabitants to make the time which could be taken from the business of the occasion pass pleasantly. Good weather, however, may be desired and deserved, but cannot be had to order. A succession of heavy showers and the mugginess of August are not conducive to activity, and are not what one counts upon in June. Notwithstanding this unexpected drawback, the fact that this was the third time the Association had met in Detroit indicates the favorable regard which its members have for that city.

The President, Dr. H. O. Marcy, addressed the Association upon "Evolution in Medicine." He referred in a spirit of liberality to schisms in medicine, and deprecated any manifestation of jealousy between the national medical societies of this great country. There is room for all the work which they all may desire to undertake. The evil of intemperance and the scourge of consumption were touched upon. The establishment of a national board of health with representation in the cabinet by a secretary of public health, was advocated. Reform in coroner's laws was recommended, and supervision of food supplies and civic hygiene were strongly urged. The relation of the Association to the medical profession in foreign countries received attention, and hearty co-operation in international congresses was suggested.

In General Session provision was made for the election from the Sections of a General Business Committee to facilitate the transaction of the Association's affairs and to minimize the loss of time in general debate. The duty of the General Business Committee will be to give especial attention to the interests of the Association, and to promote the welfare of the various Sections; to consider all matters of business referred to it by the Association, and report upon them at the earliest possible moment, when the Association may adopt or reject the report as it may deem best.

On the second day, in General Sessions, the meeting was convulsed by a report of the Judicial Council, declaring that Dr. W. W. Potter, of Buffalo, was ineligible as a member of the Board of Trustees on account of his connection with the New York State Medical Society. This is the outgrowth of the old trouble about the Code. A wordy rumpus arose, but what threatened for a time serious trouble was finally shelved by reference of the whole subject to a committee of five which is to confer with committees of the same number from the New York State Society and Association.

The address on Surgery was by Dr. J. B. Hamilton, on the General Principles of the Surgery of the Brain; and the address on General Medicine by Dr. A. L. Gihon, U. S. N., on Intellectual Progress in Medicine.

The Association wisely avoided Chicago, and selected Milwaukee as the next place of meeting.

THE FOUR-YEARS' COURSE AT THE HARVARD MEDICAL SCHOOL.

SOMETHING more than a year ago it was announced that the faculty of the Harvard Medical School had taken the important step of increasing the compulsory course of study from three years to four. Editorial reference was made in the JOURNAL, May 28, 1891, to this change and to similar proposals which were then under consideration by the medical faculties of the University of Pennsylvania and of Columbia College. At that time the details of the new course at Harvard had not yet been arranged.

The change goes into actual operation in September of this year. A provisional announcement of the graded four-years' course of instruction, applicable to students entering the first class at that time, has now been issued.

General chemistry will be a requirement for admission on and after June, 1893. Medical Chemistry alone will be taught in the School. Students conditioned in general chemistry at the examination for admission will be furnished, in the School, during the first year, with opportunities for making up this condition.

Applicants for admission to the Medical School who shall have studied three years in recognized colleges technical or scientific schools, in which courses in anatomy, physiology, histology, and general chemistry

are a part of the instruction, may be admitted to advanced standing provided they pass an examination in these subjects.

The Lawrence Scientific School at Cambridge has established a course in anatomy, physiology, and hygiene, the first two years of which are approved as a preparation for the four-years' graded course in medicine now offered.

In the fourth year, in addition to the regular work of the year, not less than three hours of examination in electives are obligatory. Students intending to elect dermatology, neurology, or gynecology in the fourth year need not pass an examination in these subjects at the end of the third year, provided their choice is made at the beginning of the second half of the third year. Students electing ophthalmology, otology, or orthopedics in the fourth year are obliged to pass only the two-hours' examination in these subjects at the end of the year. Only one hour of these two can count as an elective. Candidates for the degree who shall have served satisfactorily as internes in the Massachusetts General Hospital, Boston City Hospital, Carney Hospital, or Children's Hospital, for a period of not less than one year, may be exempt from examination in the electives of the fourth year.

The fees for the first three years remain as at present, two hundred dollars for each year, and the fee for the full year to all students entitled to be classified as fourth-year students will be one hundred dollars. These fees cover all school expenses, except a sum not exceeding \$10 for anatomical and chemical material.

At the end of the four years of study the degree of Doctor of Medicine will be given to those students who have fulfilled its requirements. This degree *cum laude* will be conferred upon candidates who have obtained an average of over seventy-five per cent. in all the required examinations.

Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the advanced classes must pass an examination in the branches already pursued by the class to which they seek admission, and furnish a satisfactory certificate of time spent in medical studies. No student may advance with his class, or be admitted to advanced standing, until he has passed the required examinations in the studies of the previous year, or a majority of them; nor may he become a member of the third class, until he has passed all the examinations of the first, in addition to a majority of those of the second year; nor of the fourth class, until he has passed all of the examinations of the first and second, in addition to a majority of those of the third year.

Further explanations of the change are given on another page (Dr. Fitz's paper) of this issue. We do not doubt that the results, and those not remote, will justify the School in the courageous and unselfish forward step it has made in medical education, and that the lead which it has taken will be soon followed by other schools of the country.

MEDICAL NOTES.

OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION FOR THE ENSUING YEAR. — President, Dr. Hunter McGuire, of Richmond, Va.; First Vice-President, Dr. H. O. Walker, of Detroit; Second Vice-President, Dr. H. Brown, of Kentucky; Third Vice-President, Dr. Henry Janes, of Vermont; Fourth Vice-President, Dr. Jesse Hawes, of Greeley, Col.; Treasurer, Dr. R. J. Dunglison, of Philadelphia; Secretary, Dr. W. B. Atkinson, of Philadelphia; Assistant Secretary, Dr. Montgomery; Librarian, Dr. George W. Webster, of Chicago. To fill vacancies on the Board of Trustees: Dr. Alonso Garcelon, of Lewiston, Me.; Dr. Leartus Connor, of Detroit; Dr. Perry H. Millard, of Minnesota, and Dr. Patterson, of Washington. Members of the Judicial Council: Dr. N. S. Davis, of Chicago; Dr. John Morris, of Baltimore; Dr. H. D. Didama, of New York State; Dr. John B. Roberts, of Philadelphia; Dr. A. M. Emmert, of Iowa; Dr. W. T. Briggs, of Nashville, Tenn.; Dr. C. W. Voorhees, of Coldwater, Mich.; Dr. W. E. B. Davis, of Rome, Ga.; Dr. A. Morgan Cartledge, of Louisville.

Section on Surgery and Anatomy. — The following were elected officers of this Section: Dr. James T. Jenks, of Hot Springs, Ark., Chairman; Dr. Ernest T. Tapley, of Detroit, Mich., Vice-chairman; Dr. Liston Montgomery, of Chicago, Secretary.

Section of General Medicine. — The officers chosen are as follows: Chairman, Dr. Charles Stockton, Buffalo, N. Y.; Secretary, Dr. Charles Webster, Chicago; Executive Committee, Drs. Hobart A. Hare, Philadelphia, Isaac Atkinson, Baltimore, and N. S. Davis, Jr., Chicago.

DRUNKENNESS AS A VIRTUE. — Dr. George Foy, in a letter to the *London Medical Press*, refers to a book published in London, in 1723, as tending to show that the habits of the general public have changed very much during the last century and a half. The title of this book is as follows: "Ebrietatis Encionium, or the Praise of Drunkenness; wherein is authentically and most evidently proved the necessity of frequently getting drunk; and that the practice of getting drunk is most ancient, primitive and catholic. Confirmed by the example of Heathens, Turks, Infidels, Primitive Christians, Saints, Popes, Bishops, Doctors, Philosophers, Poets, Freemasons and other men of learning in all ages. By Boniface Oinophilus de Monte Fiascone, A. B. C."

NEW ENGLAND.

DEATH-RATE IN BOSTON FOR MAY. — There were 895 deaths reported in May making the death-rate 23.39. The number of deaths reported as due to consumption was 129; diphtheria, 39; scarlet fever, 34; typhoid fever, 9; pneumonia, 105.

BOSTON ASYLUMS. — The Suffolk County Grand Jury have presented a report to the Judge of the Superior Court on the subject of some of the public

institutions of Boston. A committee of the jury visited the Insane Asylums at South Boston, Austin Farm and the Charlestown Almshouse. They found and commented upon the same bad conditions which have previously been noticed by the special committee appointed by the Mayor, an account of which has been published in a previous number of the JOURNAL.

THE CONVALESCENT HOME OF THE CHILDREN'S HOSPITAL. — The new Home at Wellesley Hills was dedicated on the 16th by the Rt. Rev. Phillips Brooks. A large number of persons interested in the Home were present at the ceremony.

THE MASSACHUSETTS REGISTRATION REPORT FOR 1891 will be edited by Dr. F. A. Harris. For several years these reports have been edited by the secretary of the State Board of Health.

CHRISTIAN SCIENCE IN BEVERLY. — A good deal of excitement appears to have been caused in Beverly, Mass., by the death of three children who were said to have been under the medical care of Christian Scientists. The first two were believed to have died of diphtheria; in the third case, a death certificate, in which the cause of death was given as heart-failure, was not accepted by the Board of Health. The Board has announced that hereafter heart-failure will not be accepted as a cause of death.

RABIES IN LYNN. — One of the men bitten by a dog supposed to be mad, an account of which appeared in the JOURNAL of May 19th, has died. A portion of the brain and spinal cord have been sent to the Harvard Medical School for examination.

THE MAINE MEDICAL ASSOCIATION met in Portland on June 9th. The following officers were elected: President, Dr. Alfred Mitchell of Brunswick; Secretary, Dr. Wm. Cammett, of Portland.

NEW YORK.

COLUMBIA COLLEGE. — At the one hundred and thirty-eighth annual commencement of Columbia College, held at the Carnegie Music Hall, June 8th, there were 116 graduates in the Medical Department. The biennial prize of \$500, of the alumni of the school, for the best essay embodying the results of original investigation, was awarded to Dr. Wm. Hallett Parke, of New York, and two \$500 annual fellowships, also provided by the Alumni Association, to Drs. Parke and Alexander Lambert.

Miscellany.

THERAPEUTIC NOTES.

ANTI-SEPTOL¹ (cinchonine iodosulphate) represents one of the various recent attempts to obtain an efficient substitute for iodiform without the objectionable features of the latter. It is odorless, and is made by the addition of a solution of iodine and iodide of potassium to sulphate of cinchonine. Its use is largely confined to continental Europe.

¹ Squibbs Ephemeris.

ANTINERVIN² was introduced into medicine a couple of years ago as being analytically salicylbromanilid, and similar in its effects to acetanilid. Its recommended efficiency in diabetes has not been verified, and we hear little of it professionally. From a careful examination, it is now concluded to consist of a mixture of 50 parts acetanilid, 25 parts salicylic acid, and 25 parts of bromide of ammonium.

Correspondence.

LETTER FROM DETROIT. AMERICAN MEDICAL ASSOCIATION MEETING.

DETROIT, June 11, 1892.

MR. EDITOR. — During the past week it has been impossible to walk the streets of Detroit without every moment running against a man with a lapel button bearing the cabalistic device, "A. M. A., '92, Detroit." There were delegates everywhere. The number registered was between one thousand and eleven hundred. Many were accompanied by their wives, so that the total number probably reached fifteen hundred. The quantity of literary material provided was simply overwhelming. There were three hundred and fifteen papers on the programme, so that every third man went to Detroit armed with a paper. In five of the sections the papers prepared for the election of the members ranged between forty and forty-seven, and in some of the sections nearly the entire number was read. The section on State Medicine enjoys the distinction of having had the least number, only eight titles appearing on the programme.

The arrangements for the meeting were all that could be desired. The committee had secured the Opera House for the general sessions and meeting-places for the sections were provided in close proximity. The stage of the Opera House had been handsomely decorated with palms, hydrangeas and other flowering plants, behind which sat ensconced the genial secretary, Dr. William B. Atkinson, who has every detail of the Association work at his fingers' ends.

The sections began their morning sessions at nine o'clock and continued until eleven o'clock, when they were expected to adjourn to meet in general session, but some of the sections seemed to take more interest in their scientific work than in the medico-political work of the Association, continuing their meetings long after the hour of adjournment. The afternoon sessions were held from three to six o'clock. Several of the sections had exhausted their programmes by Thursday evening, while others were still at work on Friday afternoon. The section meetings were well attended during the first few days, but many of the members started for home Thursday evening or Friday morning, so that the last day's sessions showed the presence of only the more enthusiastic or more conscientious members. An immense amount of work was accomplished, and the man who went to Detroit with the idea of having an easy time, made a mistake. The work began at nine A. M., and continued with little interruption until six P. M., and every other available hour was taken up with the meeting of delegations, committees and the like. Some confusion was caused by the variations in the time as shown by the different watches. The watches of the western men showed central time, while those of the eastern delegates showed eastern time an hour later, while the meetings were regulated by Detroit city time which was about half an hour faster than the one and half an hour slower than the other.

A very pleasant incident in connection with the opening exercises was the presentation to the president of the Association by Dr. H. O. Walker, of Detroit, of a gavel fashioned from the wood of the celebrated Pontiac tree.

Dr. Marcy won for himself distinction as a presiding

² Squibbs Ephemeris.

officer. There were times when the Association seemed in danger of being capsized through the ill-balanced efforts of some of the members. Most of the storms or more correctly speaking, whirlwinds, arose in connection with questions relating to the status of delegates from the New York State Medical Society. The first occasion was when the report of the Judicial Council was presented declaring that the New York State Medical Society and the Medical Society of Erie County, New York, were not entitled to representation in the Association. There then arose a great hubbub, motions and amendments were hurled at the president with bewildering confusion, while several gentlemen with stentorian lungs were trying to express their views on the subject. An attempt was made to have the report referred back to the council, but the president decided that the report of the council was final, and in this decision he was sustained by the vote of the Association. Later on in the session the question was asked as to the status of the permanent members of the Association who were also members of the Societies mentioned above. This gave rise to another effort to graft upon the Association methods that would do credit to a political ward meeting or to a convention for the nomination of a president. In the end a conclusion was reached which seemed to give universal satisfaction. This provided for a committee of conference consisting of members from the American Medical Association, the New York State Medical Society and the New York State Medical Association, this committee to report at the next annual meeting; to this was added the proviso that in the meantime the permanent members of the Association who were also members of the Societies in dispute, but who had registered in good faith, should be entitled to the rights of permanent members.

It was then thought that the matter was ended, but the next day one of the gentlemen who had advocated the passage of the resolutions put his foot in it by calling for their reading. It was then found that the names of certain gentlemen from New York had been incorporated in the proviso. These names had not been read when the resolution was presented and voted upon. This gave rise to some pretty positive remarks, in which the insertion of the names after the adoption of the resolution was characterized as falsification of the record. Dr. Gihon who had presented the proviso referred to, attempted to gain the floor to reply, and a personal discussion was only prevented by the President insisting that as the hour had arrived for the delivery of the Address on General Medicine, Dr. Gihon should take the floor and address the Association on the subject of *Medicine*.

The social features of the meeting were extremely enjoyable, every effort being made by the profession of Detroit to make the visitors feel that they were welcome. On Tuesday evening a reception was tendered the members of the Association and their ladies at the Light Infantry Armory by the profession of the city. This was well attended and thoroughly enjoyed. On Wednesday evening there were receptions at the residences of the Hon. H. S. Pingree, Mayor of Detroit, Gen. R. A. Alger, Mr. George S. Davis and Mr. Frederick K. Stearns. During the day the ladies were entertained with carriage rides around Belle Isle Park and with yacht rides on the river.

Thursday afternoon the members of the Association and the ladies accompanying them, spent the afternoon in an excursion on the Detroit River and Lake St. Clair, at the invitation of the local profession. Two river steamers were lashed together, and from fifteen hundred to two thousand persons enjoyed the trip, which lasted four hours. Entertainment, solid, liquid and musical, was provided on board; and by the time the boat reached the wharf, there was little left but the musicians, while a stack of cases of empty Apollinaris and champagne bottles stood a silent witness of the appreciation of the party of the good things provided for their enjoyment.

The meeting of 1892 will long be remembered by the Association, as much for the generous manner in which it was received as for the extent and quality of its scientific work.

METEOROLOGICAL RECORD,

For the week ending June 4, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-meter	Thermometer.	Relative humidity.	Direction of wind.	Velocity of wind.	Wet'rh'y.	Rainfall in inches.						
	Daily mean.	Daily mean.	Maximum.	Daily mean.	Daily mean.	8.00 A. M.							
S. 29	30.05	64	76	52	43	85	64	W.	S.	4	15	C.	O.
M. -30	30.13	64	65	62	75	85	80	S.W.	S.	21	x	F.	G.
T. -31	30.41	69	77	61	51	85	83	S.	S.E.	6	10	F.	C.
T. 1	30.16	64	88	60	88	71	80	S.W.	S.W.	10	20	C.	C.
T. 2	29.98	80	91	68	67	88	82	S.W.	W.	17	10	C.	C.
S. - 3	30.43	55	67	58	67	58	62	E.	S.E.	15	6	O.	O.
MEAN	30.12	67	76	60	71	72	71			12	9		.04

* O., cloudy; C., clear; F., fog; G., fog; H., haze; R., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ** Mean for week.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, JUNE 4, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhoeal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,515,261	668	374	26.41	20.41	1.65	4.29	3.26
Chicago	1,904,850	428	275	11.73	26.79	1.43	5.57	2.19
Philadelphia	1,944,664	362	117	14.10	13.20	2.40	2.40	1.10
Brooklyn	808,343	329	136	13.67	18.04	2.48	4.34	2.17
St. Louis	451,770	150	46	14.74	8.63	4.02	6.7	2.68
Boston	448,417	209	61	8.10	11.35	.45	3.15	1.80
Montgomery	—	—	—	—	—	—	—	—
Cincinnati	296,968	—	—	—	—	—	—	—
Cleveland	362,000	102	54	17.64	3.92	6.86	.98	2.04
Pittsburg	249,060	106	53	26.32	10.34	7.52	8.48	2.82
Milwaukee	240,000	—	—	—	—	—	—	—
Nashville	25,168	26	10	19.25	12.72	3.18	7.70	11.05
Charleston	65,165	34	16	41.16	—	41.16	—	—
Portland	36,425	12	5	—	—	—	—	—
Worcester	84,625	28	12	3.57	10.71	—	—	3.57
Lowell	71,940	34	14	41.70	—	5.88	—	—
Bridgeport	70,625	24	11	—	14.70	—	—	—
Lawrence	55,727	26	6	24.00	20.66	—	12.00	—
Springfield	44,654	19	9	26.30	—	5.26	5.26	—
New Bedford	44,179	16	6	6.25	6.25	—	—	—
Providence	30,733	7	2	—	42.84	—	—	—
Meriden	30,567	—	—	—	—	—	—	—
Salem	30,861	12	3	8.33	8.33	—	—	—
Haverhill	27,412	9	4	—	—	—	—	—
Brockton	27,294	—	—	—	—	—	—	—
Faunton	25,645	3	1	—	—	—	—	—
Malden	23,631	8	4	27.50	—	—	12.50	12.50
Fitchburg	22,637	14	5	—	—	—	—	—
Waltham	18,707	5	0	—	20.00	—	—	—
Pittsfield	17,281	3	3	—	—	—	—	—
Quincy	13,201	6	0	—	—	—	—	—
Northampton	14,880	3	0	—	—	—	—	—
Newburyport	13,947	3	0	—	—	—	—	—
Brockline	12,103	1	0	—	—	—	—	—
Medford	11,679	3	0	—	33.33	—	—	—
Everett	11,668	3	4	—	—	—	—	—
Devon Park	10,182	1	0	—	—	—	—	—
Peabody	10,158	1	0	—	—	—	—	—

Deaths reported 2,971: under five years of age 1,175; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas and fevers) 424; acute lung diseases 335; consumption 334; diphtheria and croup 111; diarrhoeal diseases 73; scarlet fever 68; measles 65; typhoid fever 45; cerebro-spinal meningitis 19; whooping-cough 13; erysipelas 13; malarial fever 10; small-pox 5; puerperal fever 2.

From measles New York 38, Brooklyn 12, Philadelphia 5, Chicago 4, Cleveland 3, Boston, Pittsburgh and Newton 1 each. From typhoid fever Chicago 14, Philadelphia 7, St. Louis and Cleveland 4 each, Pittsburgh 5, Boston 3, New York 2, Washington, Nashville, Lowell, Lynn, Salem and New Bedford 1 each. From cerebro-spinal meningitis New York 7, Chicago and Lawrence 3 each, Lynn 2, Boston, Cleveland, Washington and Malden 1 each. From whooping-cough New York, Chicago, Philadelphia and Brooklyn 2 each, St. Louis, Boston, Pittsburgh,

Washington and Nashville 1 each. From erysipelas New York and St. Louis 4 each, Boston 3, Philadelphia and Lowell 1 each. From malarial fever New York 5, Brooklyn 3, Cleveland and Pittsburgh 1 each. From small-pox New York 4, Brooklyn 1.

In the three countries of England and Wales with an estimated population of 10,188,449, for the week ending May 29th, the death-rate was 19.4. Deaths reported 3,797: acute diseases of the respiratory organs (London) 265, measles 203, whooping-cough 113, diphtheria 51, scarlet fever 49, diarrhoea 44, small-pox (London) 1.

The death-rates ranged from 8.7 in Derby to 27.5 in Sunderland; Birmingham 23.7, Bradford 17.1, Cardiff 18.0, Croydon 13.8, Hull 18.6, Leeds 15.6, Leicester 22.3, Liverpool 24.8, London 18.8, Manchester 25.2, Newcastle-on-Tyne 18.7, Nottingham 14.8, Plymouth 17.1, Preston 23.4, Swansea 19.2, Wolverhampton 25.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 4, 1892, TO JUNE 10, 1892.

APPOINTMENT.

To be chief of the Record and Pension Office of the War Department, with the rank of Colonel, in accordance with the Act of May 9, 1892, MAJOR FRED C. AINSWORTH, surgeon, May 27, 1892, to fill an original vacancy.

COMMISSION VACATED BY NEW APPOINTMENT.

COLONEL FRED C. AINSWORTH, chief of the Record and Pension Office, his commission is surgeon, with the rank of Major, June 1, 1892.

Leave of absence for four months, to take effect after June 30, 1892, is granted COLONEL ANTHONY HIGGIN, surgeon, U. S. A.

The following assignments to duty of assistant surgeons, U. S. A., recently appointed, are ordered:

FIRST-LIEUT. CHAMPE C. McCULLOCK, JR., will proceed from Charlottesville, Va., to Fort Sam Houston, Texas, and report in person to the commanding officer of that post for duty.

FIRST-LIEUT. FREDERICK P. REYNOLDS, will proceed from Elmsira, N. Y., to Fort Monroe, Va., and report in person to the commanding officer of that post for duty.

FIRST-LIEUT. ISAAC P. WARE, will proceed from North Abson, Me., to Fort Douglas, Utah Territory, and report in person to the commanding officer of that post for duty.

FIRST-LIEUT. ROBERT S. WOODSON, now at Fort McPherson, Ga., will report in person to the commanding officer of that post for duty.

FIRST-LIEUT. MADISON M. BREWER, is relieved from temporary duty in the Surgeon-General's Office, Washington, D. C., and will proceed to David's Island, N. Y., and report in person to the commanding officer of that post for duty.

FIRST-LIEUT. GEORGE D. DASHON, now at Columbus Barracks, Ohio, will report in person to the commanding officer of that post for duty.

FIRST-LIEUT. SAMUEL R. DUNLAP, assistant surgeon, U. S. A., is relieved from duty at Fort Supply, Indian Territory, and will report in person to the commanding officer, Camp Penn, Colorado, Texas, for duty at that station, relieving MAJOR JOHN O. SKINNER, surgeon, U. S. A. Major Skinner, upon being relieved by First-Lieut. Dunlap, will rejoin his proper station, Fort Clark, Texas.

CAPTAIN WILLIAM B. DAVIS, assistant surgeon, is relieved from duty at Fort Clark, Texas, to take effect upon the return of Major Skinner to that post, and will report in person to the commanding officer, Fort Sam Houston, Texas, for duty.

MAJOR EDWARD B. MOSELEY, surgeon, is relieved from duty at Fort Sam Houston, Texas, to take effect upon the arrival at that post of Captain Davis, and will report in person to the attending surgeon, Washington, D. C., for duty in his office.

Leave of absence is granted CAPTAIN FREDERICK V. WALKER, assistant surgeon, U. S. A., Fort D. A. Russell, Wyoming, until June 30th, to take effect on arrival at Fort D. A. Russell of CAPTAIN JULIAN M. CARELL, assistant surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 11, 1892.

E. R. STILT, assistant surgeon, detached from Naval Hospital, Philadelphia, and to examination for promotion, and then to Bureau Medicine and Surgery.

T. B. BAILEY, assistant surgeon, detached from Receiving-ship "Minnesota" and to examination for promotion, and then to Naval Hospital, Philadelphia, Pa.

J. C. BYRNES, passed assistant surgeon, ordered to special duty at Norfolk and Portsmouth, Va.

H. D. WILSON, assistant surgeon, ordered to the Receiving-ship "Minnesota."

G. B. WILSON, passed assistant surgeon, ordered to temporary duty at Naval Hospital, Chelsea, Mass.

INTERNATIONAL DERMATOLOGICAL CONGRESS IN VIENNA.

The second meeting of the International Dermatological Congress will be held in Vienna from the 5th to the 10th of September, 1892.

Many of the most distinguished representatives of dermatology and syphilography from all countries have promised to present papers and the indications are that the meeting will be a great success from a scientific standpoint.

The Committee on Organization, through the President, Professor Kaposi, has extended a cordial invitation to the members of the American Dermatological Association and of the New York Dermatological Society and others interested in dermatology in this country to be present.

The members' fee (five dollars) should be sent with titles of papers intended for presentation to the Secretary for North America, Dr. Prince A. Morrow, 66 West 40th Street, New York, or to the Secretary-general of the Congress, Dr. Gustav Riehl, Wien 1-20, Bellaria Straße 12.

BRITISH MEDICAL ASSOCIATION.

The thirty-sixth annual meeting of the Association will be held at Nottingham on Tuesday, Wednesday, Thursday and Friday, July 26, 27, 28 and 29, 1892.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

The ninth annual meeting will be held at Richfield Springs, N. Y., June 23, 24 and 25, 1892.

Several delightful excursions are arranged for members and their families who desire to see this picturesque country. Ample accommodations will be provided for members and their families at the Springs House, for the nominal charge of two dollars per day.

WILLIS E. FORD, M.D., Utica, N. Y., President.

J. B. WALKER, M.D., Philadelphia, Secretary and Treasurer.

APPOINTMENT.

WILLIAM HENRY HOWELL, Ph.D., M.D., of the University of Michigan, has been appointed Associate Professor of Physiology in the Harvard Medical School.

RECENT DEATHS.

WILLIAM R. BIRDSELL, M.D., died in New York, June 7th, aged forty years. He graduated in the University of Michigan and from the College of Physicians and Surgeons, New York, in 1887. He was for several years Professor of Nervous and Mental Diseases in the Woman's Medical College, and was President of the New York Medical Neurological Society in 1885-86. He was a member of several societies, and the author of several papers on nervous diseases.

PHILIP E. DONLON, M.D., died in New York, June 12th, aged forty-three years. He graduated from the University of New York in 1870. He was made coroner's physician in 1883, and has been re-appointed by each successive coroner.

THEODOR MEYNERT, M.D., Professor of Mental and Nervous Diseases in the University of Vienna, died May 30th, aged fifty-nine.

CHARLES FREDERICI, M.D., Professor of Clinical Medicine at Florence, died May 29th, aged fifty-four years.

BOOKS AND PAMPHLETS RECEIVED.

Medical Education and Legislation. By Geo. J. Engelmann, M.D., St. Louis. Reprint. 1892.

Myleitis in a Case of Incipient Posterior Spinal Sclerosis. By J. T. Bakridge, M.D. Reprint. 1892.

Nephrectomy for Calculus Pyelitis. By W. W. Keen, M.D., and David D. Stewart, M.D. Reprint. 1892.

The Etiology, Diagnosis and Treatment of the Prevalent Epidemic of Quackery. By George M. Gould, M.D., of Philadelphia. Reprint. 1892.

Cystic Degeneration of the Muscular Fibres of the Heart: A form of disease hitherto undescribed. By Arthur V. Meigs, M.D. Reprint. 1892.

Original Articles.

CASE OF ALLEGED NAPHTHA POISONING IN A RUBBER FACTORY, WITH AN INQUIRY INTO THE EFFECTS OF THE INHALATION OF NAPHTHA VAPOR.¹

BY R. H. CHITTENDEN,
Professor of Physiological Chemistry in Yale University,
AND JOHN W. FARLOW, M.D., BOSTON.

MICHAEL KIRBY, about thirty years of age and weighing one hundred and sixty pounds, whose previous history is not well established, but who was considered healthy and not a drinker, while engaged in cleaning out a churn containing a mixture of rubber and naphtha was found dead in the churn at 2 P.M., although he was seen alive and apparently well about five or ten minutes before. He was removed from the churn and a doctor summoned, who pronounced it death from naphtha poisoning. No autopsy was held.

The churn, open at the top, was five feet one and one-half inches deep, and three and one-half feet in diameter, its capacity being about forty-eight cubic feet. In this receptacle was placed a mixture of rubber, whiting and very little sulphur with considerable naphtha, the whole being agitated by paddles which revolved in the churn. In the present case, the paddles for some reason stopped revolving, and it was decided to clean out the churn in order to learn the cause of the trouble. A trowel was found clogging the paddles, that Kirby had presumably let fall into the mixture. This was on September 4th, and Kirby was at once directed to clean the churn. As is customary in such cases, he drew off all that he could, namely, the more fluid portion, then got into the churn and baled out the rest. No trouble was experienced from this. The work was resumed the two following days, and on September 7th he was told to finish it. There was then about three-quarters of an inch of the compound in the bottom of the churn, although it was nearly dried out, that is, there was little or no naphtha in it; and it was while he was at work on this, after his dinner, that he was found dead. It was not necessary for him to have his head nearer than arm's length from the bottom of the churn.

Very soon after this, two men got into the churn and remained about the same length of time that Kirby did after he was last seen alive, and they felt no ill effects from it. A week later, a man got in and finished cleaning it, and he, likewise, experienced no ill effects. Later, a man got into it when it was half full of "rubber stock," and worked there for half an hour. He did not notice the naphtha any more than he did when he was in the covering-room, where most of the men work.

The churn-room is 24½ feet long, 15 feet 11 inches wide, and 12½ feet high, and contains 4,659 cubic feet. It has five large windows each 5 feet 5 inches wide and 7 feet 10½ inches high, two on the south side and three on the west. On the east is a door, 6 feet 9½ inches high and 2 feet 11½ inches wide, opening into a passage-way which leads to the outer air, the passage being 3 feet 10 inches wide and 13 feet 8 inches long. Huxley, in his "Elementary Physiology," page 100, says, "to be supplied with respiratory air in a fair state of purity, every man ought to have at least 800 cubic

feet of space to himself, and that space ought to be freely accessible by direct or indirect channels to the atmosphere." The churn-room contained nearly six times the space needed for one man.

The churn was on the east side of the room on a raised platform two feet three inches from the door-way. The top of the churn was five feet eleven inches below the ceiling and three inches below the top of the door-way, hence there was ample opportunity for circulation of air between the top of the churn and the ceiling, aided by the close proximity to the door-way.

At the time of Kirby's death, the door on the east side of the churn-room was wide open and also the outside door at the end of the passage; a south window was open six inches top and bottom, while another south window had a pane gone and one west window nearly opposite the door was down six inches from the top.

According to the weather report of that day, the wind averaged ten miles per hour from the north-east. The highest temperature was 77° F. in the afternoon. The humidity was high, 89 per cent. at 8 A.M., and 92 per cent. at 3 P.M. There was no rain.

In a room of the given size, with free access, by means of open doors and windows, to a wind blowing ten miles an hour, there could not have been any accumulation of vapor even if considerable naphtha had been exposed to evaporation. On the contrary, the evaporation of naphtha from the rubber stock in the churn at the time of the fatal accident must have been comparatively slow. First, because the amount of residual stock was small; secondly, because the residual stock could not have contained more than 20 to 30 per cent. of naphtha; and, thirdly, because the naphtha which remained in the stock was only slowly volatile.

The more fluid portion of the contents of the churn was drawn off on the afternoon of September 4th; on the 5th and 6th, more of the thick mixture was removed; and on the 7th, there was only a small layer of residual stock. During all this time evaporation was going on; that is, the dangerous element in the mixture was gradually diminishing during the three days in which Kirby worked without detriment, until finally a residue was left from which evaporation of naphtha took place very slowly.

This is plainly indicated by the following experiment: 128 grammes of rubber stock from the bottom of a churn, after standing three days, were placed in a suitable retort, and the naphtha distilled and collected. It was heated by contact with boiling water for five hours, and as a result 25.5 grammes or 22.2 per cent. of naphtha distilled over; on raising the temperature still higher, to above 200° C., 12.9 grammes or 10 per cent. more naphtha was obtained, making a total of 32.2 per cent. of naphtha.

Naphtha is a volatile fluid, but when in contact with rubber and other material making up the rubber stock it is apparently held tenaciously by this material, and its evaporation rendered a long and slow operation. In the experiment quoted above only a small quantity of material was taken and the mixture was heated for hours in boiling water, under conditions by which free naphtha would have been quickly evaporated off, yet it required over six hours continuous heating, a portion of the time at a temperature more than three times above the boiling point of naphtha before all of the latter could be removed from the rubber mixture.

¹ Read before the Boston Society for Medical Improvement, March 14, 1862.

Further, the evaporation of the naphtha was throughout the entire experiment a gradual process; at no time did a rapid distillation occur. Other experiments leading to the same result are as follows:

Two specimens of rubber stock, of the same thickness and consistency as that in the churn at the time of Kirby's death, were placed in sealed jars, and one labelled "No. 1, February 16th," the other, "No. 2, February 17th"; 524 grammes of the mixture from No. 1 yielded, by long-continued distillation, 144 grammes of naphtha or 27.4 per cent., while 641 grammes from No. 2 gave only 133 grammes of naphtha or 20.7 per cent. as a result of several hours' heating at a high temperature. These last two experiments confirm the preceding in showing that the naphtha held in the churn stock does not evaporate readily as free naphtha would, but is held tenaciously by the rubber mixture: further, the experiments show that there had evaporated 6.7 per cent. of naphtha as a result of one day's exposure of the rubber stock in the churn.

These results lead to the conclusion that on September 5th and 6th Kirby must have been exposed to a more dangerous atmosphere, or at least one more charged with naphtha, than on September 7th, when there was a much smaller amount of stock, and this contained a much smaller proportion of naphtha.

Let us now look at the nature of the naphtha in the churn. Naphtha is made up of a number of closely related hydrocarbons from the distillation of petroleum. These hydrocarbons are of low specific gravity, that is, are lighter than water and have a comparatively low boiling point, the naphtha representing the lighter and more volatile portions of petroleum, in distinction, for example, from kerosene and other higher boiling products. Commercially, naphtha and benzine are essentially the same, but naphtha, or as it is sometimes called, petroleum ether, is, strictly speaking, a lower boiling product and hence more volatile than benzine. But, as a matter of fact, the naphtha used so extensively for manufacturing purposes in this country is a mixture of naphtha No. 0, No. 1, No. 2 and benzine.

The naphtha used in the factory where Kirby was employed was examined, and it was found to have a specific gravity of 0.681, and contained about 37 per cent. by volume of hydrocarbons with a boiling point below 70° C.; in other words, 37 per cent. of the naphtha was volatile at a temperature of 70° C. The great difference in volatility between that portion of the naphtha distilling below 70° C. and that portion boiling or distilling above 70° C.—a point of considerable significance in this case—is made strikingly manifest by the following experiment: Two equal portions of naphtha, one the fraction distilling below 70° C., and the other the fraction distilling above 70° C., were exposed to the air, side by side in uncovered dishes at the ordinary room temperature, for six hours. As a result, it was found in measuring the naphtha remaining in the two dishes, that of the portion distilling below 70° C., 25 per cent. had evaporated, while of the portion distilling above 70° C., only 8.5 per cent. had evaporated. Now, the more volatile portions of naphtha are obviously the most dangerous. In all cases where persons are exposed to naphtha vapors the lower boiling hydrocarbons would be the first to volatilize, and their action would naturally be the most pronounced, and under ordinary circumstances the larger the proportion of

these more volatile products, the greater would be the danger from naphtha fumes. Dragendorff, Professor of Toxicology in Russia, says, "The higher boiling constituents of petroleum are hardly to be classed with poisons. There are cases where they have been borne in large quantities without harm."

A sample of rubber stock from the bottom of a churn of the same consistency and character as that in the churn at the time of Kirby's death, yielded only two per cent. of naphtha boiling below 70° C. In other words, the exposure of naphtha in an open churn for two or three days, is followed by a fairly rapid evaporation of the most volatile hydrocarbons, leaving a residue in which the heavier hydrocarbons predominate. Hence, it is obvious that the naphtha which remained in the residue of the churn stock Kirby was occupied in removing, must have been nearly or entirely free from those more volatile and dangerous portions of the naphtha which distil below 70° C.

Let us now consider the toxic action of naphtha as indicated by the result of experiments with animals. Over twenty distinct experiments were tried with rabbits and dogs, and where any toxic effect was produced the symptoms were essentially the same in every case. The animal was placed in a large can open at the top; on the bottom of the can was placed a quantity of naphtha, the animal sitting or standing on an inverted wire sieve, which raised him a few inches from the naphtha and kept him out of it, although allowing free passage of the vapors. At times, the top of the can was covered with wire netting to prevent the animal from jumping out. There was no rubber to retard the evaporation and the naphtha (76° Baume) contained the full amount of the more volatile hydrocarbons.

Restlessness was the first symptom noticeable and in no experiment did the action of the naphtha at first extend to such a point that the animal could not jump out of the can if allowed to do so. In fact, the animal always attempted to leap out. On being restrained, it gradually became weaker and ceased to attempt escape, the teeth grinding together and then, sooner or later, there invariably came a point when the animal fell over and was attacked by violent convulsions, the body being curved or arched, the legs rigid, the facial muscles drawn back, exposing the teeth and jaws, the mouth stretched open and the legs often quivering with convulsive tremors. On being removed from the can, after a minute or two, the animal always recovered after a short time, say thirty minutes. In no case were these attacks followed by death; weakness remained apparent for a short time, but the animal soon hopped about as usual. There was apparently no true anesthesia, no direct narcotic effect produced, no tendency to fall into a stupor and sink away into a quiet death, but always, at the end, there came the terrible convolution of marked opisthotonic character, shrill cries and effects which point plainly to spinal action, or to irritant action on the motor centres in the brain.

In Kirby's case there was no evidence of a violent, convulsive death, no clinched fingers, staring eyes, distorted features, and he made no outcry. With rabbits, when the fumes of the naphtha have nearly taken possession of the animal, he instinctively raises his head above the top of the can and by breathing a little of the purer air above obtains a new lease of life.

Animals do not quickly succumb to the action of naphtha fumes, even when they are exposed to com-

paratively large quantities of free naphtha for some time. This point is well illustrated by the following experiment: A large dog, weighing twenty-eight pounds, was confined in a wooden box or cage lined with galvanized iron, two feet wide, three feet four inches long and two feet eight inches high; the bottom on which the dog stood was of heavy wire netting; under this was a tightly fitting iron tray, the bottom of which was five inches below the netting. The top of the tray was of wire netting and during the experiment was partially closed by towels laid over it.

The dog was placed in the cage at 9.30 A. M., and a little more than a quart of naphtha (76° Baumé) poured into the tray. The vapor rose through the cage, and the atmosphere in the room was charged with it. The animal remained there five hours without being noticeably affected.

In order to see how quickly death would result from naphtha under circumstances most favorable for its action, the same dog was held by two assistants, and a sponge and cotton saturated with the same naphtha were continuously held to his nose. Within five minutes he began to tremble, the pupils widely dilated, quickly followed by a violent convulsion, the limbs rigid, the facial muscles contracted, showing the teeth and jaws, blood oozed from the nose, frothy mucus or slime from the nose and mouth, and shrill cries. Fresh naphtha was continuously applied to the nose. Involuntary discharges of urine and feces followed. The convulsions were so great that the two men could hardly hold him. It was a continual struggle, convulsion passing into convulsion, with occasional moments of comparative quiet with labored breathing. After twenty-five minutes, at the end of a violent convulsion, he sank down dead, without showing any tendency to sleep or stupor.

In order to note the different effects of the low and high boiling naphthas on animals, the following is instructive. Two rabbits of equal weight were taken. In the previously described can were placed 200 cubic centimetres of naphtha distilling below 70° C., that is, naphtha which was almost entirely wanting from the churn stock. The rabbit was placed on the sieve, and the top of the can covered by an inverted sieve. This was at 8.55. The rabbit became uneasy and restless at once. At 9.06 he was unsteady and swaying to and fro, head low down, jaws and teeth grating. At 9.07 he fell over in convulsions. At 9.08 he lay limp, breathing heavily. At 9.11, a slight convulsion, followed by a heavier one. At 9.12 he was taken out of the can and laid on the floor. At 9.14, recovering, but unable to use his legs, trembling on trying to walk. At 9.16, hopping about, apparently well.

In the same apparatus and under exactly the same conditions, the other rabbit was placed with 200 cubic centimetres of naphtha boiling above, instead of below, 70° C. This was at 9.27. At 10.15 he was unaffected. At 11.30, still all right, though apparently somewhat drowsy and weak. At 12.00, very quiet on the bottom of the sieve. Touched lightly he fell over, lay quietly for a moment, then fell over on his side without a convulsion. Finally, had a strong convulsion with shrill cries. Taken out and placed on the floor, he lay for some minutes scarcely breathing, then gradually recovered, though still weak in the legs. At 12.15 he was on his feet again, and hopping about as usual.

In this latter experiment, where the naphtha cor-

responds to that present in the residue of churn stock, we see that two and one-half hours elapsed before the animal was sensibly affected, while in the first experiment where the lower boiling naphtha was used the rabbit was in convulsions in twelve minutes. In both cases the mode of action was the same, the main difference being the rate of action. One other important point is brought out by the following: 200 cubic centimetres of naphtha distilling above 70° C. were poured into the can, a good-sized rabbit placed on the sieve, and an inverted sieve covered over the top of the can. This was at 9.55. At 10.58 the animal was quiet on the bottom of the can; at 11.18, ditto; at 12.00, fell over on his side; at 12.02, slight convulsion, then lay quietly on the bottom of can, eyelids and facial muscles twitching; at 12.05, heavy convulsion.

In most of the experiments, the rabbits were removed from the can at this point and an opportunity given for their recovery. In this case, however, the animal was allowed to remain in the can. At 12.07, there were convulsive tremblings continuously, most pronounced in the forelegs. The animal lay on its side, its head on the sieve, not more than three inches above the layer of naphtha, pupils contracted almost to a point. This condition continued till 12.35, when the convulsive tremblings were succeeded by a violent convulsion followed immediately by death, the head thrown well back, the mouth stretched wide open, and the lips drawn back. In the first part of this experiment we have simply a repetition of previous results; but after the heavy convulsion at 12.05, we see that death did not follow immediately, although the animal lay near the bottom of the cage with its head almost in the naphtha. Death was delayed half an hour, although the bottom of the can was covered with a layer of free naphtha.

In Kirby's case he was seen ten minutes before his death; the naphtha then in the churn must have been similar to that used in the last mentioned experiment with the rabbit. We are obliged to conclude that, if these experiments illustrate the way that naphtha acts, then Kirby could not have been killed by naphtha.

Naphtha is used very extensively throughout New England, but we have been unable to learn of a single fatal case of naphtha-poisoning that has come to the notice of the medical examiners and chemists. At a large rubber factory in the vicinity of Boston, we were told that in the cloth-covering room, where a great many times as much naphtha is used as in the churn-room, there were formerly among the working-girls, many instances of "naphtha-drunk" or silliness, sometimes followed by unconsciousness. When the girl was taken into the air, she soon recovered and went to work again. It was principally hysterical girls and those who ate no breakfasts who were thus affected. More ventilation in the room and obliging the girls to eat breakfast, put a stop to these unpleasant attacks.

In the *Revue des Sciences Médicales*, for 1888, Sury-Brienz publishes what he calls the first case of death from the vapor of benzine. A man, twenty-four years old, was working in a chemical factory. It was very cold out-of-doors. Against the rules, he went into a place where the toxic vapors were being formed, without opening doors and windows in advance. He fell dead immediately after coming out, but it is not stated how long he was there. The

autopsy showed some softening of the brain, old adhesions of the lungs and some thickening of the cardiac valves from former disease. The other lesions, probably due to the benzine, were fluid blood, great lividity, congestions and some haemorrhages. In this case, then, which is supposed to be the first fatal case in France, there is evidence of old disease of the brain, lungs and heart, and the benzine was inhaled in a fresh state, in a room where there was no ventilation.

Poincaré, a French authority, says there have been many cases of unconsciousness among workers in naphtha, but only one death. He gives no particulars of this one case, but it was before 1879. Lewin, a famous German writer on poisons, says that workers on rubber fabrics stand benzine without detriment to their health.

Felix, in the *Offentliches Gesundheitspflege*, for 1872, page 231, gives some experiments on healthy men. Into a paper cone, loosely filled with cotton wool, of which the point was cut off, pure benzine was poured, and held before the noses of several healthy men, as in giving chloroform. In the first eight minutes, the pulse rose and later fell. Five to fifteen grammes of benzine, inspired for from seven to twelve minutes produced dizziness, nausea, desire to vomit, cough, burning in the chest and sleepiness. Twenty to forty grammes inspired for eight to twenty minutes produced sleep and full anesthesia as by chloroform. The stupor lasted two to eight minutes, and after coming to, they complained of nausea, sleepiness, and headache. The very slow pulse returned to normal in ten to twenty minutes. Some persons bore the inspiration of fifty to fifty-five grammes without lasting disturbance.

Hirt, "Diseases of Occupation," 1875, Band 2, page 183, says he examined a great many workers in rubber, benzine and naphtha, and was astonished to find them exceptionally healthy. After a stay of several hours in benzine air, there was no trouble with pulse or respiration.

Poincaré, "Hygiène Industrielle," 1886, page 207, attributes the headache, pain, exhilaration followed by depression, to the bi-sulphide of carbon rather than to benzine. But bi-sulphide of carbon is very volatile, with a boiling point of 45° C., and cannot be present in the churn residue, which does not begin to boil until about 70° C.

In *L'Union Médicale*, Paris, 1861, page 92, is an article by M. Perrin. After some experiments on animals with benzine, he concludes that intoxication by benzine is very different from that by chloroform. In chloroform and ether the ultimate and deadly period of intoxication does not exceed three or four minutes, while with benzine it may last five times as long without the death of the animal following. Benzine seems incapable of producing that complete and remarkable inanition and insensibility of the whole body which is a characteristic of the anesthetic proper. The persistence of sensibility, which is only weakened, the *heavy convulsions* and the functional exaggeration of the circulation and the respiration, indicate that the nerve-centres are affected in a particular way, and that the physiological effects resemble closely those which result from animals breathing the essential oils, a toxic dose of which causes drunkenness, convulsions and death without the animal passing through the state of true anesthesia.

It would be possible to multiply experiments and

quotations; but, in our opinion, we are justified in concluding that Kirby's death was not due to naphtha, because—

(1) He was accustomed to it.

(2) He had worked in the churn for several days without bad effect, when the naphtha was much more abundant, more volatile, more dangerous, than when he was found dead.

(3) The churn room was well ventilated, and there was no possibility of accumulation of fumes.

(4) Experiments on animals, even with free, low-boiling naphtha, and continuously applied, show a mode of action and death entirely unlike the Kirby case.

(5) We are unable to find in medical literature any similar case to Kirby's, where it was known that death was due to naphtha.

(6) Cases of sudden death, particularly soon after dinner, in persons who were not known to have any cardiac or other serious disease, are sufficiently common to justify us in concluding that Kirby's death was due to some natural cause, and that it was not caused by naphtha.

ABDOMINAL AND PELVIC EMERGENCIES CAUSING SUDDEN DEATHS.¹

BY J. C. IRISH, M.D., LOWELL, MASS., AND A. R. STONE, M.D., BOSTON.

THE chief duty of the medical examiner, and what he especially owes to the State, is to make inquiries into each case to which he is called, why the State has lost its subject. When he can say that the State has lost its subject through nobody's fault, his investigation as medical examiner has ceased. The State is not interested to know of what one subject or another has died, only that there has been no foul play. It simply limits its inquiries by its desire to know whether it has lost its subject by the fault of another.

Now, in the number of cases in which a medical examiner is called during the year, there will be but a very small percentage of them in which the State has lost its subject by the fault of another; probably not one-tenth of them. Therefore in the remaining nine-tenths, when the medical examiner has established the fact that death was due to natural causes, one portion of his duty is fulfilled. In addition, however, he is not only to find that these subjects died from natural causes, but also to certify of what particular disease they died.

Hence, in connection with our office we are confronted oftentimes by simple, sudden deaths, with no preceding history of any illness in the few hours previous to death. For instance, the patient has gone to bed apparently well, and is found dead the next morning, and we are asked to decide what was the cause of death, or its most probable cause. This is one of the questions that we must answer to the best of our ability, and answer oftentimes with the aid of very little evidence.

So far as our absolute knowledge goes, we do not know the cause of death in many instances, and we have not data enough to make a reliable or probable conjecture as to its cause. Yet, there is no suspicion that the deceased came to his death by anything than by natural causes, so there is no reason for asking for

¹ Read before the Massachusetts Medico-Legal Society, February 3, 1892.

an autopsy. Fortunately, however, we often have the preceding history perhaps of one or two days' illness, which was not thought to be dangerous, to give us very considerable aid in forming our conclusions, and in those cases we are able to sign the certificate of burial intelligently, and probably correctly.

Still, as I have said before, there are very many of them in which the cause of death, is a matter of mere conjecture, which is entirely unsupported by any testimony. It therefore behoves us to investigate with all possible care the various causes of sudden death, and whatever investigation can throw any light on these various causes is of great assistance, and of great value in aiding us to arrive at correct conclusions in particular cases.

In the subject which has been assigned to me to-day, there are very many interesting inquiries to be made. The experience of any one man as to what causes sudden death due to any accident occurring in the pelvic abdominal cavity must be very slight. The ordinary practitioner, or medical examiner, who has seen two or three such cases, has had really a very large experience. Therefore in drawing any conclusions upon this subject relative to the frequency of those accidents, or, upon the occurrence of any given case, it is simply necessary to investigate as thoroughly and exhaustively as possible the combined experience of all our writers. I therefore avail myself of the recorded experience of others that has come readily within my reach.

It is not my purpose in this paper to touch upon the subject of hemorrhages into the pancreas, which has already been treated so ably and exhaustively by the President of this Society, Dr. F. W. Draper. Neither do I intend to consider abortion, for complicated as it is with questions of law and morality, it deserves a place entirely by itself in the transactions of this Society. I shall, however, call your attention to-day to those non-traumatic conditions in the abdominal cavity and pelvis which may cause death in such a manner as to demand our attention.

I shall run over briefly the cases which have come to my notice in glancing over the literature of the subject, and then add a few cases which have fallen under my own personal observation.

First of all I shall take up the cases which have occurred in the course of typhoid fever, where death has occurred in the so-called walking or ambulatory cases.

Dr. Fitz² in his recent investigations upon the subject of perforations has collected 4,680 cases with 5.58 per cent. of perforations, thereby agreeing with Holscher³ whose report of 2,000 cases observed by him showed perforation in 6 per cent. of the cases. Murchison⁴ gives a percentage of nearly double this, while Schulz⁵ and Liebermeister⁶ in the hospitals of Hamburg and Biele report a percentage of only 1.2 per cent. and 1.8 per cent. respectively.

All these taken together would make a trifle less than 5 per cent. in a total of 14,087 cases. What the exact data, from which Dr. Fitz obtained his 4,680 cases, is, we have no means of knowing, but it would seem from a number of other statistics that we have seen, that he made no attempt to tabulate all that has

been written on the subject, and that if all were collected, that the percentage would be on the whole less by one or two per cent. than the 6.58 per cent. which he is inclined to consider the true percentage of perforations. But whatever the real percentage may be, every one has the idea firmly fixed in his mind that a large number of these cases occur in the lighter cases of typhoid. Murchison⁷ states that this is due to the fact that this assertion was originally made by Louis and Chomel (1834), who found the disease latent, previous to the perforation, in 10 out of 12 cases examined by them. This statement was copied into all text-books, and it was only later after long investigation that perforations were found to be more common in severe cases of typhoid. Fitz's paper supports Murchison, for of the nearly 200 cases of perforation collected by him, only 14 cases occurred in walking typhoid.

Many of our instructors have taught what has been so strongly asserted, supported as it is by autopsies, and probably backed by unreported cases which have occurred in the course of their own consulting practice, that there is a prevailing sentiment through the medical profession that perforation is specially common in ambulatory typhoid. In spite of this general belief cases of sudden death often occur in persons who have had a mild form of the disease, and whose death has doubtless resulted from the carelessness of the physicians, who neglected to remember that perforation must always be borne in mind in the treatment of typhoid fever.

A case that will serve to illustrate this is one narrated by Louis,⁸ where a man with a mild case of typhoid was allowed to walk about the hospital garden each day. He was improving until the twenty-third day when perforation with the usual symptoms of collapse and peritonitis set in, and the patient died within thirty-six hours.

Two similar cases are reported to have occurred at Guy's.⁹

Many people have not known just what has been the matter with them, and have gone to the hospital only to die in a short time from perforation. Murchison¹⁰ relates a case of this kind where the patient walked three miles to the hospital in order to find out what was the matter with himself, and died within thirty-six hours of his entrance from collapse. And Louis is said to have seen a similar case. Such cases are always a great shock to the friends, but they do not specially interest us, for the cause of death in such cases is usually apparent. The same is true in those cases which occur late in the stage of convalescence. The history of the previous illness, together with the sudden onset of severe symptoms referable to the abdomen, leave little doubt as to the true cause of death.

The case of Tweedie¹¹ is in point. Here the patient had had an ordinary case of typhoid, and was up and about, apparently convalescent, and had been allowed to leave the house. The stools were well formed, and perfectly natural. Suddenly, symptoms of perforation occurred, and the patient quickly died.

Another similar case is recorded by Murchison. Here the patient, a laborer, had been convalescent for

² Boston Medical and Surgical Journal, October 1, 1891.

³ Brit. Med. Journ., 1891, xxviii, 68.

⁴ Murchison: Transient Contained Fevers.

⁵ Schulz Cbl. für. Allg. Path. u. Path. Anat., 1891, II, 269.

⁶ Ziemssen's Arch. d. sp. Path. u. Thera., 1874, II, 1, 161.

⁷ Murchison: Continued Fevers, 2d Ed., 1872.

⁸ Murchison: Continued Fevers, 3d Ed., 1872.

⁹ Transactions of the Medical Society of London, 1862, II, 120.

¹⁰ Murchison, 1872, p. 75.

¹¹ Recorded by Murchison.

two weeks, and had returned to his work. One day while working he was suddenly attacked, and died in a few hours. The intestine showed typhoid ulcers nearly cicatrized, one of which had perforated and caused the fatal peritonitis.

In spite of their rarity, cases do occur when the typhoid gives no signs, or such obscure signs that they are overlooked, and treatment meant to meet certain more manifest symptoms is inaugurated, which may work most disastrously upon the typhoid lesions.

Bennett¹² reports a case of this kind where a man who was supposed to have cardiac disease with dropsy was purged. He was allowed a liberal diet, as he had an extremely good appetite. After a fortnight the bowels became loose for a couple of days, then there was complaint of general distress with some abdominal tenderness, which was taken for peritonitis from inflammation of the kidneys. Sudden death took place the next day from perforation of the ileum.

Sestreville¹³ reports a case where there had been absolutely no symptoms till the sudden advent of peritonitis, and the patient died four days later.

A very interesting case is reported from the Hants County Insane Asylum,¹⁴ and one where the charge of neglect might give considerable trouble to the authorities. The patient, a woman, was confined in the asylum for mild mania and delusions, and having some dementia. She was up and about the wards, and was not considered sick until two days before her death. Till then made absolutely no complaint to the nurses.

July 17th she refused her breakfast, and complained of abdominal pain. By night she showed signs of peritonitis, and died the next day at noon. At the autopsy the ileum and large intestine were found to have numerous and undoubted typhoid ulcers, and one of the former had perforated.

Any one who has had experience with the difficulties of diagnosis in light cases of typhoid will readily see how much, on account of her mental condition, the difficulties would have been increased had she made complaint, as she did not.

A case reported by Kleinwachter¹⁵ shows how a really secondary matter can absorb the whole attention. A patient entered the hospital with an abortion well under way, and signs of peritonitis already present. A four months' fetus was delivered without any difficulty, but in spite of all treatment the patient died the next day. The general course of the case lead the physicians to think of induced abortion, and they were much surprised to find at the autopsy numerous typhoid ulcers, and a perforation from which the peritonitis had started. The abortion had started as secondary to the disease, or been induced at the time of the perforation.

November 21, 1891, I was called by a member of the Board of Health to investigate the cause of death in the case of Mrs. K., who had died suddenly, the preceding night. She was taken sick about five weeks before. The first physician who attended Mrs. K. pronounced the disease typhoid fever. A second medical attendant doubted this diagnosis. The fever was of very mild type. Her physician had not seen her for the ten days before her death and refused to sign the certificate for burial. Mrs. K. had for several days been about the house and in the street.

¹² Trans. Path. Soc. Lon., 1882 [Fitz].

¹³ Bull. Soc. Anat., 1874.

¹⁴ Lancet, October, 1889.

¹⁵ Wiener Med. Presse, 1880, xxi, 337.

In the night of November 20th, she was seized with extreme pain in the abdomen and great prostration, and died three hours later. Although no autopsy was made, there can be no doubt that this patient's death was caused by intestinal perforation.

Murchison¹⁶ gives some cases where sudden symptoms have followed exposure to foul air of vaults, etc., and as some of them have resulted in sudden death with symptoms which might have been attributed to poison, they are of value here.

In August, 1829, twenty out of twenty-two boys who were attending the same boarding-school were seized within three hours with fever, vomiting, purging and excessive prostration. One boy, three years old, had been attacked two days before, and had died comatose in twenty-three hours. Another, five years old, had died in twenty-five hours after being attacked. It was found on investigation that a choked-up drain had been opened two days before the first case of illness, and the contents spread on the boy's play-ground. At the autopsy the Peyer's patches and solitary glands were enlarged like "condylomatous elevations," and in one case the mucous membrane was slightly ulcerated. The mesenteric glands were enlarged and congested.

A little girl of nine had been playing over the grating of a choked-up cesspool, from whence such foul smells came that sometimes the horses had to be removed from the stable. She was shortly after attacked with febrile symptoms, vomiting, purging, and intense headache followed by acute delirium. She died forty-seven hours after the commencement of the attack. After death the characteristic lesions of early stage of enteric fever (typhoid) were found in the intestines.

Ulcerations in the stomach and upper intestine may give but little trouble, so much so that patients have no idea that anything serious is the matter, and think that they are only run down.

A case bearing on this point has been presented by Harman.¹⁷ A boy of ten years was playing in Central Park, New York, when he stumbled and rolled down the hill on which he was. Half an hour later he was brought to the hospital. He was slightly dazed, his temperature was 101.4°, and his pulse 110, the abdomen was slightly tympanic and tender on pressure. Four hours later he began to get pale, the pulse quickly became imperceptible, the tympany and tenderness increased, the respiration became weak and shallow, and vomiting set in, and the patient died within three hours after the onset of the collapse.

The autopsy disclosed an ulcer of the duodenum ten inches from the pyloric opening, which had perforated, and the peritoneal cavity was full of intestinal contents.

There had been no hemorrhage. No other ulcers were to be found. Investigation of his parents showed that the boy had made no complaint, and had no symptoms referable to the gastro-intestinal tract.

A class of cases will next present themselves for attention where there is usually sudden pain in the pelvis followed by severe collapse, blanching and general appearance of internal hemorrhage. These cases have been recognized as a source of danger for a long time, but their frequency has been understood only since the advent of abdominal and antiseptic surgery.

Since 1872 there has been a great mass of literature on the subject of ectopic gestation, yet but little of it

¹⁶ Murchison, p. 472.

¹⁷ Medical News, August 1, 1881.

is of value to us at the present time except that anything that will throw light upon the diagnosis of obscure pelvic symptoms of course aids us in establishing our opinion as to the cause of death. But the question of abdominal operation *vs.* electricity, etc., which have occupied so much space have no interest for us except as clinicians. Therefore we are obliged for the purposes of this paper to throw out the great mass of brilliant operations which have been accumulating in the last few years. The number of cases of ectopic gestation which are now seen and recognized make it probable that in the past there must have likewise been a great many. But the fact that there are so few lithopedia to be found in museums,¹² etc., make it probable that only a comparatively few cases pass to full term, and that from the small number of autopsies to be found that only a small per cent. die of either hemorrhage or shock. In by far the greatest number of fatal cases death seems to come from exhaustion, or from peritonitis, and follows some time after the first attack. Even in those cases that Barnes calls "cataclysmic," the patient usually survives long enough to allow of medical consultation.

A case reported by Dr. Trush gives a very fair idea of the usual course of an extra-uterine pregnancy. Dr. Trush's¹³ patient was attending to her ordinary household duties when she was suddenly seized with excruciating pain in the lower part of the abdomen, and almost immediately everything turned dark. When the syncope disappeared she vomited freely, and an intense sickening pain in the abdomen continued. This was the attack, and gradually, after a long tedious convalescence the patient recovered, an invalid.

In spite of the fact that death so sudden that it does not allow of diagnosis is extremely rare, yet enough cases do occur to make it necessary that the examiner should have the subject of extra-uterine pregnancy in his mind in cases where the history in any way points to the pelvic organs.

Dr. Draper¹⁴ has reported a case where an unmarried girl, of eighteen was brought to the City Hospital in a state bordering on collapse. She was greatly blanched, and complained of severe pain starting in the pelvis and extending down the thighs and to the back. The hypogastric region was extremely sensitive to palpation. In spite of all stimulation the patient died five hours after her admission to the hospital.

The clinical data were insufficient to establish a diagnosis, and an irritant poison and criminal procedure were thought of, the case became one for medico-legal examination. The abdominal cavity was found filled with three quarts of clotted blood. The left tube was distended at its outer end to the size and shape of a small olive, and in this distended portion was a rent, from whence the ovum had escaped, and the fatal hemorrhage had occurred. The gestation was probably in its second month.

A very similar case is recorded by Jordan,¹⁵ of Budapest. A mill-girl soon after beginning her day's work fell to the floor complaining of severe pain in her abdomen. She quickly became unconscious, and remained so until she died. At the hospital she was unconscious, very much blanched and lay slightly turned to the right side. The right leg was perfectly quiet

as if paralyzed. The left leg was drawn up flexed on the body. The patient moaned most of the time, and any attempts to examine the abdomen caused increased moaning, when the left leg was moved.

Physical examination showed the organs of the body normal excepting the presence of edema in the lungs was noted. In the pelvis a tumor was felt upon the right side. The breasts were slightly enlarged, and later it was learned from friends that there had been no menstruation for two months. After some delay diagnosis of extra-uterine pregnancy was made with rupture on the right side. As preparations were being made for operation the patient suddenly died. A medico-legal examination followed. The left tube was found ruptured, and a solid clot weighing about 1,000 grammes was found on the right side of the pelvis.

(The writer draws the conclusion from this case that the patient lay instinctively upon the unaffected side just as a person with acute pleurisy. The blood consequently gravitated to the right side making the tumor appear upon that side. Therefore Jordan thinks that the position of lying should always be taken into consideration in establishing a diagnosis as to which tube is affected.)

The following case of Zweifel,¹⁶ of Leipzig, though operated upon, illustrates very well the suddenness of the attack, and the difficulties in the way of making a diagnosis. The patient was taken with very sudden and severe symptoms of abdominal pain while she was in the garden. She fell to the ground, and from there was removed to the hospital. She had recently had her third child, and there had been no signs of pregnancy present. Colostrum was found in her breast, and a pelvic tumor was felt on vaginal examination. Laparotomy was performed, and a ruptured tube was found, but the patient only lived a short time after the operation.

In June, 1890, I was called to Meredith, N. H., to operate upon a patient who was suffering from hemorrhage into the abdominal cavity. I reached the patient about two o'clock in the morning five hours after the summons, when I found a woman apparently almost entirely exsanguinated with sighing respiration, and an almost imperceptible pulse. The history of the case is as follows:

This woman had been apparently well. Had missed one menstrual period, and a day or two before had commenced to menstruate. She was left in the morning alone in the house. When her husband returned at 5 o'clock in the afternoon, he found her lying upon the floor entirely unconscious. On examination an ill-defined solid mass was found in the abdominal cavity. There could be no doubt that this was a case of ruptured ectopic pregnancy. The patient had so much the appearance of being in *articulo mortis* that I regarded any surgical interference as absolutely hopeless. The patient, however, went on to a complete recovery, except that there has since remained in the pelvis a distinct solid mass. Although this patient did not die, and the diagnosis was not verified, either by operation or post-mortem examination, still there can be no question as to its correctness. When she fell to the floor, had she died instead of making a narrow escape, and had been found in this condition, the medical examiner who would have been called in, would probably never have suspected the real cause of death, and in no other

¹² Tabs, quoted by Cushing, Boston Medical and Surgical Journal, 1891, No. 2.

¹³ Trans. Obs. Soc. N. Y., 1886, p. 1283.

¹⁴ Boston Med. and Surg. Journal, January 8, 1891.

¹⁵ Allg. Zeit., November 14, 1891.

= Zweifel : Archiv. f. Gynäk., 1891.

way could this have been determined than by a post-mortem examination.

A case reported by Förster²² is very suggestive, as similar cases could easily occur among a class of patients where foul play might be suspected. The woman was twenty-nine years old, and had one child a year before. Menstruation was regular until one month before, when the duration was six instead of three days, but was very scanty throughout. The patient stated that she did not believe herself pregnant. With the approaching menstrual period she had had greatly increased sexual desire, which her husband had been gratifying to excess. During this procedure the patient felt a sharp pain in her right side, which she supposed to be due to indigestion, and various household remedies were used. Three hours later the physician was called. The patient was then in complete collapse, with pulse hardly to be felt, blanched, and with cold, clammy perspiration. The lower part of the abdomen was sensitive. The husband denied cohabitation for some months past, and refused an operation asked for on the diagnosis of extra-uterine pregnancy. The patient died in a few hours. After death two litres of blood were found in the abdominal cavity. The right tube was distended, and a rent was present large enough to allow of the escape of the head of the fetus. A right corpus luteum was present.

SUDDEN DEATH FROM AFFECTIONS OF THE NERVOUS SYSTEM.¹

BY PHILIP COOMBS KNAPP, A.M., M.D.,

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An inquiry into the causes arising within the nervous system which may give rise to sudden death is by no means easy. Registration reports and vital statistics seldom separate such cases from the total number of deaths attributable to any given cause, and a study of clinical records with autopsies would require an enormous expenditure of time before a sufficient amount of evidence could be accumulated. I can offer, therefore, only a few *a priori* considerations as to the possible occurrence of sudden death in affections of the nervous system, basing my statements rather upon the probable events in any given disease than upon statistics. In such a study I exclude traumatic affections of the nervous system, and poisons which cause death by their action upon the nervous system, whether they be taken into the system from without, as in the case of opium, or be generated within as in the case of the poison of uremia.

Before beginning the inquiry, however, a word of definition seems necessary. I shall limit the consideration to cases of death occurring within an hour from the onset of symptoms; only in such cases will I speak of sudden death, using the term speedy death for cases where death occurs within twenty-four hours.

I shall consider sudden death as occurring from affections of the peripheral nerves, the spinal cord, the brain, and in the neuroses.

I. PERIPHERAL NERVES.

Sudden death is not uncommon where there is in-

¹ Read before the Massachusetts Medical-Legal Society, February 3, 1892.

²² Förster: *Jour. Amer. Association*, 1890, p. 1304.

flammation of the vagus. It is due undoubtedly to paralysis of the heart. Such a vagus neuritis is not uncommon after the acute infectious diseases, especially diphtheria, and to it are now generally attributed the sudden deaths which are so common after these afflictions. In multiple neuritis arising from other causes such a sudden cardiac paralysis rarely, if ever, occurs. When death ensues as a result of vagus neuritis, as is not uncommon, it is of gradual onset, and is attended by various respiratory and circulatory symptoms. It would seem, therefore, that some other factor beside the vagus neuritis, is requisite; and this factor is probably the degeneration of the cardiac muscle, which is also not infrequent in such cases. Only in the last instance can these cases be attributed to affections of the nervous system, for the acute infectious disease has a large share in their causation. They may therefore be excluded from this inquiry, the more in that they seldom have any medico-legal interest.

II. SPINAL CORD.

Lesions of the spinal cord rarely, if ever, give rise to sudden death. Lesions of the medulla will be considered with lesions of the brain. It is, of course, obvious that lesions high up in the cord, close to the medulla, may act very like lesions of the medulla itself, but such lesions need no separate consideration.

Spinal meningeal hemorrhage.—Olivier long ago contended that meningeal hemorrhage, unlike cerebral hemorrhage, could not produce death by a "stroke." Leyden² later contested this statement, and Gowers³ thinks it very common for death to ensue in a few hours. Death, however, seems to be speedy rather than sudden; it usually takes place, at the soonest, after a period of three to six hours, with symptoms of spinal pain, paraplegia, etc. In a part, at least, of the fatal cases, especially those where death has come on the quickest, the hemorrhage was high up, involving the medulla, or there was co-existing cerebral hemorrhage, or the patient died of shock.

Spinal hemorrhage. Hemato-myelia.—This affection is extremely rare, and it seems to cause death rather less speedily than meningeal hemorrhage, unless the lesion be high up. The shortest time in which Leyden⁴ found that death occurred was thirteen hours.

Acute hemorrhagic myelitis.—Death in this affection is distinctly of slower onset than in hemorrhage. Strümpell⁵ thinks it not impossible that, in some cases where children die in a short time with fever, convulsions, etc., there may be an acute polio-myelitis; but that is purely an hypothesis. Unless the myelitis involve the upper part of the cord death seldom occurs until a week or more has elapsed.

III. BRAIN.

Meningitis.—Even in the fulminating forms of cerebro-spinal meningitis, and the rapid cases of tubercular meningitis and meningitis from ear disease, we rarely meet with cases of sudden death. Stillé⁶ finds the shortest duration of any case of cerebro-spinal meningitis (Gordon's) to be five hours. Meningitis of tubercular origin or from middle ear disease may come on suddenly, with paralysis, etc., as if from a "stroke," and the patient may rapidly become comatose, and die; but in such cases the period of coma is more or less

² Leyden: *Klinik der Rückenmarkkrankheiten*, i, 382.

³ Gowers: *Diseases of the Nervous System*, i, 267.

⁴ Leyden: *Op. cit.* ii, 80.

⁵ Strümpell: *Text-book of Medicine*, p. 632.

⁶ Stillé: *System of Medicine* (Pepper), i, 819.

protracted and the patient usually lives several hours or even days.

Meningeal Hemorrhage. — Hemorrhage into the meninges of the brain, whether it be dural or pial, usually does not give rise to sudden death. In fourteen cases of surface hemorrhage Dana¹ found the limits within which death occurred to be from one to eight days. If, however, the hemorrhage be due to a rupture of a large vessel at the base (notably the basilar artery, the favorite seat of aneurisms), the resultant pressure upon the medulla will cause sudden death, sometimes within two or three minutes.

Cerebral Hemorrhage. — This may be regarded as the chief cause of sudden death in afflictions of the nervous system. Sudden death is, of course, most common in hemorrhages into the medulla, the pons, or the cerebellum; most sudden, of course, in hemorrhage into the medulla. In addition to these distinct focal hemorrhages, which may from their proximity to the vital centres in the medulla, give rise to sudden death, hemorrhages higher up may rupture into the ventricles. Dana found that out of thirty-two cerebral hemorrhages, twenty-six ruptured into the ventricles; Charcot and Bouchard² found this only in eighteen out of seventy-seven cases. In only a small proportion of these ruptures into the ventricle is death sudden, although it is usually speedy. Dana gives the average duration of life as from one to three days.

Cerebral Softening. — Cerebral softening is, as a rule, less dangerous to life than cerebral hemorrhage, and much less frequently can it give rise to sudden death. Hunt³ notes a case where embolism of the only large artery that supplied the brain did not cause death for several hours. As with hemorrhage, sudden death occurs chiefly from thrombosis in the arterial supply of the cerebellum, pons, and medulla, and thrombosis of these arteries is far less common than hemorrhage from them. Out of fifty fatal hemorrhages Dana found the average duration of life to be a week, if the hemorrhage were not ventricular, but with softening the duration was from one to ten weeks.

Abscess. — Cerebral abscess need be mentioned only to note the relatively rare occurrence of rupture of its contents into the ventricle, which may give rise to sudden or speedy death, as in hemorrhage.

Tumor. — It is not unusual in cases of cerebral tumor to see come set in, without any apparent cause, and death to ensue in a comparatively short time, twelve to forty-eight hours. The cause of such a condition is uncertain; but it is very likely due to vascular changes. Only in the rarest cases may some vascular change in a new growth close to the vital centres lead to sudden death.

Encephalitis. — The few cases of acute hemorrhagic inflammation of the medulla to which Wernicke has given the name of acute polioencephalitis are the form of encephalitis in which we should most naturally look for sudden death, but even here death has occurred only after an illness of several days.

Sclerosis. — In disseminated sclerosis and in general paralysis of the insane, pseudo-apoplectic seizures and convulsions are not infrequent, and they may bring about death. Sudden death, however, is in all probability extremely rare from such a cause.

Insanity. — Sudden death is occasionally seen in

cases of acute mania, but it is due to conditions outside of the nervous system, and need not be considered here.

IV. NEUROSES.

Convulsions. — Beside accidental causes, such as asphyxia and injury, death may occur suddenly, in very rare instances, in the epileptic fit. The precise cause is unknown, but there is probably some profound vascular disturbance. It is not, however, solely in the true epileptic fit that sudden death may occur, but also in the fit due to gross cerebral lesions, tumor, general paralysis, or multiple sclerosis; and Raynaud⁴ reports a case of death from spasm of the larynx and pharynx in what was probably an hysterical convolution.

Exophthalmic Goitre. — In this affection death is occasionally sudden, and the cause is obscure. Recent hypotheses as to the nature of this disorder tend, however, to remove it entirely from the diseases of the nervous system; and, considering the profound cardiac disturbance, it is most probable that sudden death is due to some affection of the heart.

Shock. — Finally, we must speak of those cases of sudden death from emotional disturbance, from slight injury, etc., which are usually ascribed to "shock." The nature of the process is far from understood, but it is usually ascribed to inhibition of the vagus centre from cortical or reflex stimulation, and in some unknown way the nervous system plays a part.

From this very imperfect review we see, therefore, that sudden death may ensue from certain disturbances of the nervous system, — vagus neuritis, hemorrhage, convulsions and shock. Excluding the first of these, for reasons already given, we find that the chief and by far the most frequent cause is hemorrhage, and that when hemorrhage into the central nervous system causes sudden death, its seat is almost always in the brain, involving the important centres in the brain-stem. Speedy death may arise from various other conditions, — spinal hemorrhage, softening, new growths or sclerotic processes.

In the ultimate analysis, therefore, we find that sudden death in so-called affections of the nervous system, is to be referred not to changes in the nervous system itself, but to changes in the vascular system — the system primarily responsible for the majority of cases of sudden death.

At the beginning of this century apparently many of the cases of sudden death were attributed to apoplexy. As a matter of fact the nervous system is apparently responsible for only a few of the cases. Such few statistics as I have been able to gather are of old date, but they may be of interest.

Granville,⁵ found in the English reports from 1847 to 1851, 17,478 cases of sudden death, out of a total of 2,028,145, nine-tenths of one per cent. or one in one hundred and sixteen. Francis⁶ out of 733 deaths of persons over ten in the Manchester work-house found nineteen, or one in 38.57 which were sudden, within a quarter of an hour. Of these three died of apoplexy, and two of epilepsy. Derville,⁷ in forty cases of sudden death at the Paris morgue found one from hemorrhage into the pons, three from meningeal hemorrhage, two from "serous apoplexy with pulmonary

¹ Dana : New York Medical Record, 25 July, 1891.

² Wernicke : Lehrbuch d. Gehirnkrankheiten, II, 47.

³ Hunt : Birmingham Medical Review, April, 1880.

⁴ Gowers : Epilepsy, p. 161.

⁵ Granville : Sudden Death, London, 1854.

⁶ Francis : Guy's Hospital Reports, Second Series, III, 76, 1845.

⁷ Derville : Bull. de l'Acad. de Med., II, 824, 1837-38.

congestion," and three from "cerebro-spinal congestion." Only four of these can certainly be assigned to the nervous system. Out of seventy-four cases of apoplexy collected by Dana only one involved the pons and three the cerebellum, and sudden death was not noted.

It is probable, from these figures, that not one death in a hundred is sudden, and only about one-tenth of these are to be attributed to affections of the nervous system.



Clinical Department.

SOME ANOMALOUS CASES OF SCARLATINA.¹

BY J. RICHMOND BARSS, M.D., MALDEN, MASS.

I OFFER the following cases of scarlatina as interesting from a diagnostic point of view, important from a sanitary standpoint, and possibly of value to the younger members of the profession. Every gentleman present, of course, claims to be able to diagnose a case of scarlet fever, yet each one probably has had at times grave doubts as to the lesion, or even failed to make a correct diagnosis through lack of symptoms or sufficient data of local conditions to fill in the missing link. While two of the cases I am about to report are records of my own blunders, fortunately harmless both to patients and myself, I trust they may be a reminder to you, if caught under circumstances which might be more deleterious to your reputations; bearing in mind two medical friends—both capable men—who suffered more or less professional injury from false diagnoses in somewhat similar cases. To those who have made these errors, certainly to myself, comes like balm to the wounded pride, the statement of a German author who says, "one of the most remarkable peculiarities of this disease is the great variety of symptoms which it presents; a variety so great, in fact, that in consequence of the lack of sufficient evidence, there is still some doubt whether some of its forms should be included under the general designation of scarlet fever."

These reasons, and the fact that these different forms occurred in one family at the same time, seem to me to make them worthy of report. On August 16, 1891, Annie C., aged fifteen, with very fair sanitary surroundings, was taken with sore throat, which grew worse, and on the 18th, I was sent for.

I found her with temperature 102° F., and a follicular inflammation of both tonsils, no symptoms other than those of an ordinary case of tonsillitis, no eruption, no enlargement of lymphatics; ordered a gargle and phenacetin to relieve fever. Next day, 19th, found temperature nearly normal, about 99.5° F., and throat so much improved that parents thought it unnecessary for me to call again. On the second day, namely, the 21st, was sent for to see a younger child, Mary, aged seven, who had had attacks of vomiting during the day, and found temperature of 103° F., with an eruption over different parts of body, photophobia, and sneezing a good deal, no sore throat; made a diagnosis of measles; the next day I felt confirmed in my diagnosis, in spite of the fact that I now learned that there had been several cases of scarlet fever in the neighborhood, and that a child had been visiting at the house, said to be convalescing from

measles, but with anasarca, peeling and other symptoms to forcibly remind me of scarlatina. Still, I believed my case to be measles, and reported it as such. On the 26th, while still attending Case II, I was asked to see the brother, Tim, aged fifteen years, who had been purging and vomiting for several days and whom I found so thoroughly jaundiced, that he looked as dark as an Indian. The 27th he began to complain of fever and sore throat, and on examination, I found, in spite of the hue of the skin, a well-marked scarlatinal eruption. I then began to reinvestigate Mary, Case II, and found her eruption had gone, but that her temperature had kept up pretty well, averaging 101.5° F., with very rapid pulse, no swelling, no albumen, but quite sick with acute articular rheumatism, affecting wrists, knees and ankles. At this time, Annie, Case No. I, had recovered from her sore throat and was feeling well, her urine was found free from albumen, but some of the lymphatics of neck were slightly enlarged and the skin on ends of the fingers began to peel in very large flakes, so that they were very tender, no desquamation on other parts of the body. On the 28th, namely, seven days after first visit to Case II, she also began to peel, and on left half of back and belly had a liberal crop of varicella-like vesicles or pustules.

This, in brief, is the history of these cases which were all undoubtedly cases of scarlatina. No. I was probably a case of scarlatina without eruptions, the enlarged lymphatics and marked desquamation pointing to this conclusion; No. II was probably what Thomas means, when he says: "The exanthem may be very unlike the normal eruption of scarlatina, as, for instance, when it consists in discrete large roseola," this was probably the condition that I mistook for measles. The pustular eruption can be accounted for by the fact that "now and then the scarlatina eruption is followed by other forms of cutaneous disease, as herpes labialis, acne, urticaria, pemphigus, ecthyma, varicella-like and pustular eruptions, etc.; there is no connection, however, between them and the scarlatina exanthem; they belong to the domain of complications and sequelae"; as also the slight apparent rheumatism in Case No. II, which passed away in about a week. These cases all finally recovered.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from No. 21, page 531.)

GASTROSTOMIE A LA HAHN.

V. HACKER reports two cases in which he followed the technique recommended by Hahn, of Berlin,² and placed his opening in the left eighth intercostal space. He found that the gastric fistula in this position was always above the level of the stomach contents, whether the patient was sitting, standing or lying, and that it also formed practically a diverticulum from the anterior wall of the stomach. He would choose this site for operation for those patients who would require the permanent use of a gastric fistula. The action of the ribs in closing the opening when

¹ Read before the Malden Society for Medical Improvement.

² Boston Medical and Surgical Journal, 1890, vol. xxii, 320.

not in use was effective only when the intercostal space was narrow and the fistula small. This required the introduction of a Nélaton catheter at each feeding. There was found difficulty in preventing pressure necrosis of the ninth costal cartilage. This was noticed in both v. Hacker's cases, and is exceedingly liable to occur if a tube is allowed to remain in the intercostal space for any length of time.²⁹ V. Hacker also reports the results of twelve cases of gastrostomy³⁰ where the operation was performed according to his plan for forming an external sphincter to the gastric fistula by making the external opening through the fibres of the rectus muscle.³¹ He prefers the "delayed" opening of the stomach, also a small fistulous opening, and says that primary union is necessary since suppuration destroys the sphincter position and action of the muscular fibres. All of v. Hacker's cases bore the operation well. It is also shown that a suitable apparatus for closing the opening, notwithstanding its continual dilating effect, can be permanently worn in the fistula without dilating the opening and without leaking of gastric contents or causing eczema. Girard has also operated through the rectus.³²

THE SURGICAL TREATMENT OF PYLORIC STENOSIS, WITH A REPORT OF FIFTEEN OPERATIONS FOR THIS CONDITION.

N. Senn,³³ after a careful record of these cases, submits the following propositions for consideration and discussion:

(1) Pyloroplasty, as devised by Heineke-Mikulicz, is the safest and most efficient operation for cicatricial stenosis of the pylorus.

(2) Pyloreotomy in the treatment of carcinoma of the pylorus is a justifiable procedure when the disease is limited to the organ primarily affected and the patient's general condition furnishes no contra-indication.

(3) Gastro-enterostomy by the aid of large, moist, perforated plates of decalcified bone should be resorted to in the treatment of malignant stenosis of the pylorus as soon as a positive diagnosis can be made; and a radical operation is contra-indicated by local or general conditions of the patient.

In this connection the article entitled "Contribution to the Surgery of the Stomach," of Navarro, a valuable abstract of which has been written by Pick,³⁴ is of interest.

OPERATIVE TREATMENT OF INTESTINAL STRICTURE AND STENOSIS.

König (Göttingen) reports a group of 14 laparotomies done during the past ten years for intestinal stenosis due to intestinal tumors.³⁵ The cases are classified as follows:

Constriction from a band, 1. Diseases of the intestine, 13 (cancer 10 — colon descendens 4, cæcum transversum 3, colon transversum 2, colon ascendens 1); sarcoma small intestine 2; tuberculosi 1. There were 13 operations: 3 exploratory only; 3 artificial anus, 3 deaths; 7 intestinal resection. Of these seven cases, immediate suture was performed on four, with

²⁹ Wien. Klin. Wehnschr., 1890, III, 43.

³⁰ Wien. Klin. Wehnschr., 1890, III, 38-37.

³¹ Surgical Reports: Boston Medical and Surgical Journal, 1887, vol. cxvi, 257.

³² Surgical Reports: Boston Medical and Surgical Journal, 1888, vol. cxix, 200.

³³ New York Medical Record, November 7 and 14, 1891.

³⁴ Annals of Surgery, 1891, vol. xiii, p. 214.

³⁵ Centbl. f. Chir., Beilage, 1890, No. 25.

two deaths; the gut could not be united and an artificial anus was made in three instances, all of which resulted fatally (two died immediately and one from recurrence one year after operation).

The cancerous tumors being in the colon were next to the abdominal wall and movable; if adherent, could be mistaken for tumor of abdominal wall. The symptoms are varied; sometimes increasing constipation, colic-like pains from accumulation of fluid above stenosis or by invagination in vicinity of growth. Hemorrhage only in one-half the cases. Operation is the only effective treatment, and in resection with immediate union by suture, or an artificial anus, or an artificial anus without resection. König prefers to open the abdomen over the tumor. The tumor is exposed, freed, brought outside the abdomen, and operated there. Mesenteric glands should be removed if possible. In uniting the resection wound he sutures the mucous membrane, then superimposes the usual suture of the muscle and serous coats.

INTESTINAL ANASTOMOSIS BY MEANS OF VEGETABLE PLATES.

Dawbarn³⁶ has brought forward a serviceable emergency plate.

A pair of the potato plates can be made, he states, by his method in ten minutes. The material can always be procured. It has no tendency to swell; it is rigid, and remains so longer than the majority of other materials devised for this purpose. For use upon the human gut the plate should be made about one-third of an inch in thickness, and should be cut so long that the opening is about twice the normal diameter of the gut to be operated upon. To prevent the threads from cutting through, they should be very coarse, and the needle before passing through the plate should transfix a scrap of rubber drainage-tube or a minute bit of cloth, which, by its broad surface, prevents the large knot tied on the end of the thread from pulling through. Instead of first making the incisions into the gut, which subsequently serve as the artificial opening, the plate is inserted into the lumen of the bowel, through its divided end and the needles are made to traverse the gut-wall at their proper positions. When the two plates are thus placed in the two extremities of the bowel, at least two inches from the cut extremity, the corresponding threads of the two plates are tied together, thus apposing the two peritoneal surfaces covering the plates. These surfaces previously should be well scraped with a knife, so that prompt adhesions may take place. After the plate-threads are tied, at least one line of sutures should be run around the plates, great care being taken not to pass the needle into the lumen of the bowel. The author prefers a basting-stitch, since it is easier to apply, employing three stitches to the inch. When these stitches are placed, a strip of wood is passed into one open gut-end; this is for the purpose of cutting against; the opening is then made through the apposed gut-walls enclosed by the rings. To do this a scalpel is inserted into the unoccupied open end of the gut, and as long an anastomotic opening is made as the plates will allow. The strip of wood prevents cutting too deeply. After this incision is made, water should run freely into one end and out the other. Under gentle hydrostatic pressure for a few minutes, the outlet end closed with the finger and thumb, the

³⁶ New York Medical Record, vol. xxxix, No. 26; American Journal of the Medical Sciences, September, 1891, vol. ci, No. 3.

line of suture will not leak if properly made. The free ends of the bowel are next scraped, inverted, and secured in this position by a double line of running sutures. Finally a stitch or two fastens together the blind ends and the gut against which each rests, first scraping the opposed peritoneal surfaces. This prevents the possibility of another loop forcing its way into this angle with the result of undue tension of the stitches at the plate-ends.

LAPAROTOMY FOR INTESTINAL PERFORATION IN TYPHOID FEVER.

Still another case is recorded of recovery following this operation. Dr. Weller Van Hook²² answers the question, "Shall laparotomy be performed for intestinal perforation in typhoid fever?" by recording a successful case. Besides this, he records two unsuccessful cases, making to date, 19 recorded laparotomies with four recoveries. Van Hook's conclusions with those of Dr. R. H. Fitz in a thorough *résumé* of the subject read at the 1891 meeting of the Association of American Physicians are already published.²³

CIRCULAR ENTERORRHAPY.

Paul,²⁴ in cases in which end-to-end apposition is indicated, employs a decalcified bone-tube from an inch to an inch and a half long, from one-half to three-fourths of an inch in diameter, and from one-sixteenth to one-eighth of an inch thick, the lower end of which is perforated for suturing the proximal end of the bowel to it. A double thread, carrying a needle, is fastened to the tube to facilitate invagination. The tube is entirely introduced into the proximal portion of the bowel, the free margin of which is sutured to the tube through the perforations by means of fine chromicized catgut. Care should be taken to include in the suture the severed edges of the mesentery. Next, the needle armed with the double thread is introduced on a director into the distal segment of bowel, and, at a distance of three inches, made to emerge through the wall of the intestine. Then the distal end is sutured all around to the proximal end through the muscular and serous coats by means of chromicized catgut, special attention being again given to the mesentery. An assistant now makes traction on the double thread and resists the operator as he draws the distal end of the bowel back over the tube, thus invaginating the proximal end. The parts are retained in position by a few Lembert sutures, one on either side of the mesentery, and others as needed. The double thread is finally drawn tight and cut off short.

LAPAROTOMY FOR ACUTE INTUSSUSCEPTION.

Dr. D. Farquhar Curtis²⁵ records a case of operation for this condition, and adds to his former statistics as follows:

He states that in the series of cases which he reported in the Transactions of the New York State Medical Society, 1888, there were 70 cases operated upon from 1873 to 1887 inclusive, in which the mortality was seventy-six per cent. I find that there are now on record 105 cases, with a mortality of seventy per cent, — a very encouraging improvement. It also appears that out of 65 cases in which the intussusception could

be reduced only 38 died, a mortality of fifty-eight per cent. — among the children the mortality was sixty-six; among the adults forty-seven per cent. Of 17 cases in which the affected bowel was resected and sutured, only two recovered, both adults. Of 16 cases in which an artificial anus was made (with or without reduction or resection of the intussusception), two cases recovered, also both adults.

These figures show that prolonged operations are almost invariably fatal, and furnish another argument against delay, for that is the usual cause of the conditions which render operations difficult. Delay is also responsible for the high mortality in these cases, for nearly all the patients are recorded as being in very bad condition, or even in collapse, at the time of operation. Laparotomy, to give good results, must be performed as soon as systematic efforts to reduce the intussusception with rectal injections have been made without success. We must constantly bear in mind both sides of the shield; there is danger in performing laparotomy for intestinal obstruction, but there is also danger in postponing it until it must be undertaken as a last resort.

RESECTION OF THE APPENDIX VERMIFORMIS DURING THE QUIESCENT STAGE OF CHRONIC RELAPSING APPENDICITIS.

After a careful study of reported cases of operation on the appendix vermicularis,²⁶ Weir summarizes the subject as follows:

(1) That the final outcome of the review of these cases has been that the large majority of current attacks are due to catarrhal appendicitis, which, though to an unknown degree capable of producing explosive and serious peritoneal inflammation, yet generally, from the lumen of the tube being previously shut off from the cecum, limits correspondingly the chances of fecal or severe infection of the peritoneum.

(2) That the simple catarrhal appendicitis can be suspected when the recurrences are frequent, that is to say, more than four or five times, as in the acute processes this is seldom exceeded — and when such attacks are not of a severe type, nor of greater duration than a week, and particularly so if there be no appearance of a distinct tumor.

(3) In such cases delay in operating may be encouraged to a reasonable extent, at least until it is indubitably proven that the invalidism is a confirmed one. Out of five cases seen by Weir in the last year for recurrent attacks of appendicitis, in three, of the above described simple form, it was advised to wait until the next acute attack presented itself as a further justification of surgical interference; but this did not occur in any of these. In the two others, from the persistent invalidism or the severity of some of the attacks, an operation was advised.

(4) Where a tumor is present in the quiescent stage, or has been decidedly felt after the acuteness of the attack has passed off, more urgency is present, as it indicates, it is believed, either an accumulation of noxious contents or of ulceration within the appendix, or an already present small perforation. It is in such cases that Mackenzie says that we can expect, if an acute process is subsequently set up, that it will be a circumscribed rather than a general suppurative peritonitis. The frequent conjunction, in the collected cases, of adhesions with the severer forms of the catarr-

²² Medical News, November 21, 1891.

²³ Boston Medical and Surgical Journal, vol. cxxy, p. 573.

²⁴ Liverpool Med. Chir. Journal, July, 1891; Medical News, October 21, 1891.

²⁵ New York Record, October 31, 1891, p. 534.

²⁶ Annals of Surgery, vol. xiii, No. 5, p. 91.

rhal appendicitis with retained secretions or with minute perforations, seems to corroborate this view.

(5) That as the diagnosis of the separate condition of simple catarrhal appendicitis and its complications of distention from retained fluids and of ulceration, are not at present to be differentially diagnosed, and as it has been shown that each case can give rise to dangerous conditions, recurrences of severity and frequency should hereafter mean that an exploratory laparotomy should be resorted to, on the general principle of this being of less risk than the disease itself.

(To be continued.)

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from No. 24, page 612.)

THE Seventh Annual Meeting, held in the Army Medical Museum, Washington, D. C., May 24, 25, and 26, 1892.

FIRST DAY.—AFTERNOON SESSION (CONTINUED).

MID-SYSTOLIC AND LATE SYSTOLIC MITRAL MURMURS,

by J. P. CROZIER GRIFFITH, Philadelphia.

By mid-systolic and late systolic mitral murmurs are designated those which have the area of diffusion of the ordinary mitral regurgitant murmur with the symptoms of the disease, but which occupy only the middle or latter portion of the systolic period. I report three cases. The first, that of a woman of twenty years, who had suffered from rheumatism and had the ordinary symptoms of mitral regurgitation. Auscultation showed a loud and very musical murmur which occupied only the middle portion of the period between the time of the apex beat and the first sound. It was sharply separated from both the first and second sounds. The area of diffusion was purely that of mitral regurgitation; the pulmonary second sound was accentuated and there was enlargement of the right ventricle. The second case was that of a man of seventy-two, who had for some years suffered from the symptoms of regurgitation through the mitral orifice. Auscultation showed a murmur which did not begin until the latter portion (rather less than one-half) of the systolic period. It ran up to the second sound but did not supplant it. It possessed purely the area of diffusion of mitral regurgitation. The right side of the heart was enlarged. On certain occasions, when examined, the murmur was very short and very close to the second sound. The third case was that of a woman of forty-seven years who had had severe muscular rheumatism but no subjective cardiac symptoms. Auscultation showed a high pitched, systolic, slightly musical murmur which occupied the latter half or two-thirds of the systolic period and ran up to but did not replace the second sound. The murmur occupied the area of the murmur of mitral regurgitation and the second sound was accentuated. The right side of the heart was enlarged. The form of murmur just described is certainly very unusual, and the literature shows but occasional and indefinite references to it, generally under the title of post-systolic murmur, which involves a misconception of its nature and cause. The term post-systolic could apply only

on the theory that the systolic of the ventricle lasted only to the beginning of the short silence and that this silence corresponded to the relaxation of the ventricles and the time supposed to be required for the aortic valve to close. This would place the second sound not at the beginning of the diastolic period but at an appreciable time after the beginning. Several observers from the study of cardiographic tracings have indeed maintained that such was the case. This, however, involves the assumption of the existence of a physiological aortic regurgitation produced by the blood in its recoil upon the aortic leaflets passing backwards through the orifice in the process of rapidly closing. Such an assumption as this seems contrary to the perfection which we have learned to expect in Nature's apparatuses. I have long believed that there existed no appreciable time during which a murmur could occur between the relaxation of the ventricle and the occurrence of the second sound.

The recent studies of Martius with the cardiograph and the interesting investigations of Ceradini made years ago prove that such a physiological regurgitation does not exist. Ceradini showed that as the blood ceased streaming out of the ventricle, a reverse whirl of that in the aorta brought the semi-lunar leaflets into closer approximation so that the recoil when it did come with the first relaxation of the ventricle found them in perfect apposition and simply put them on the stretch, thus producing the second sound. The existence of this "persistence time," as it is named by Martius, that is, the time during which the ventricle simply remains contracted after the blood is expelled is rather short to permit of closure without regurgitation. This theory renders impossible the existence of a murmur just before the second sound, due, as Skoda and others maintain to the friction of blood on the roughened aortic walls during this recoil upon a competent aortic valve.

Adopting the view that the second sound marks the beginning of diastole, murmurs heard before it must of course be systolic and the cases which I report, all having murmurs heard in the mitral area, can with good reason be regarded as cases of mitral regurgitation. The first case is an interesting example of mid-systolic mitral murmur analogous to the mid-diastolic mitral murmur of Bristowe. The last two cases, and especially case second, are interesting in that they offer clinical proof of the view that the systole lasts quite up to the second sound. They prove too that the "persistence time" must be of exceedingly short duration as indeed Martius admits.

The production of these mid- and late-systolic murmurs admits of different explanation, depending upon the area of diffusion. In the cases reported they must, I think, have been due to regurgitation through the mitral orifice. It is possible that such regurgitation might have taken place only at the middle or latter portion of the systolic period. It seems probable, however, from the symptoms of the cases and the variation in the murmurs heard at different times that a much greater degree of regurgitation occurred than the murmur alone would indicate. This murmur is probably analogous to the potential pre-systolic murmur described by Bristowe and it is likely, I think, that the regurgitation lasted through all or nearly all of the systolic period but usually became audible, for unknown reasons, only toward the middle or latter portions of it.

SECOND DAY, WEDNESDAY.—MORNING SESSION.
DISCUSSION ON DYSENTERY: ETIOLOGY AND PATHOLOGY.¹

by Dr. W. T. COUNCILMAN, Baltimore, Referee.

We can divide dysentery into three forms: (1) Diphtheritic, (2) Catarrhal, (3) Amœbic.

The diphtheritic dysentery is characterized by necrosis of the epithelium and a fibrinous exudation. It is the form usually met with in acute epidemics. It may also appear in the course of a number of diseases, and may be produced by a number of causes. There is nothing in the anatomical lesions by which we may distinguish the action of a definite pathogenetic agent.

The catarrhal dysentery is characterized by an inflammation of the mucous surface of the intestine, leading to the production of shallow ulcers. Affections of the lymph follicles are more common in the catarrhal than in the other forms. What is said of the croupous is also the case in the catarrhal.

In both these forms, abscess of the liver may appear, but it is very rare.

The amœbic dysentery is characterized by definite lesions in the large intestine and elsewhere. The lesions have always the same character, and we can recognize in them the action of a common agent. There are extensive ulcerations of the intestines, which, contrary to those of the other two forms, appear to be produced, not by extension downward, from the surface, but by a primary infiltration of the submucosa, with subsequent destruction of the overlying mucous membrane. Clinically, the disease is characterized by remissions and great chronicity.

Abscess of the liver and lung is more frequent in amœbic dysentery.

The disease is caused by the amœba dysenteriae. It forms the most of the cases of tropical dysentery.

DISCUSSION ON DYSENTERY: SYMPTOMS, COMPLICATIONS AND TREATMENT,

by Dr. A. BRATTON BALL, New York, Co-Referee.

Differential symptomatology of (1) Catarrhal colitis, (2) Diphtheritic colitis, (3) Amœbic colitis, (4) Secondary colitis.

Absence of "dysenteric" symptoms in certain cases.

The marked tendency to anæmia and its causes.

(The symptoms and treatment of dysenteric, hepatic and hepato-abscess will be omitted, as they are to be fully treated by Dr. Dabney in his paper on "Hepatic-Abscess.")

Malarial complication, its frequency, symptoms and diagnosis.

The arthropathies of dysentery, their symptoms and pathology.

Dysenteric paralyses, their symptoms and pathology. The *Ipecac Treatment*.—Of late years physicians in India have become less enthusiastic about the advantages of large doses, and more comprehensive of their depressing effect. They have not lost faith in the ipecac treatment, but advocate its use in smaller doses. In this country the treatment has never secured a firm foothold, partly on account of the frequency with which depressing effects have been met with, and partly because the superiority of this over less objectionable methods has not been demonstrated

for the dysenteries of this country. Many recent writers who discard the large doses recommend the drug in amounts sufficient only to excite slight nausea (two or three grains), or in still smaller doses, (one-fourth of a grain every half-hour), as suggested by Loomis. The author's preference is for this method.

Opium Treatment.—After citing various authorities for and against opium, the author says the use of opium in dysentery as an antiphlogistic, is not based on known properties of the drug, and the mere fact that patients survive even large doses does not counteract the strong objections to such an employment of it. It destroys the appetite, impairs digestion, favors the retention of decomposing and fermenting products, and can be justified only by a clear demonstration of its superiority over other less hazardous methods. Such proof we certainly do not possess.

Purgatives.—Probably most, if not all, of the good effects from purgatives come from the cleansing of the intestinal canal. For this purpose it probably matters but little, which of the milder purgatives is used. Some prefer the salines, others castor oil. The latter is disagreeable to sensitive stomachs, and has no special advantages. Purgation in acute cases every second or third day is all that is required. It is objectionable in adynamic cases and unnecessary in the not infrequent cases with diarrhoeal rather than dysenteric dejections.

Calomel.—This drug has of late years fallen into general disfavor. Dr. H. C. Wood, however, says that in his hands it has yielded better results in acute stenotic dysentery than any other remedy.

Corrosive Sublimate.—The best results are obtained from this in acute cases, especially in those in which the stools are bloody and slimy. It should be given in small doses (one hundred and twentieth to one sixtieth of a grain hourly), with or without one or two drops of laudanum.

Bismuth Subnitrate is probably useless for arresting the morbid process in its early stage, but when the stools have become diarrhoeal in character, this remedy has a certain value from its sedative, astringent and possibly its antisепtic effects.

Salol.—Very favorable reports from its use have been made in recent years.

Nitrate of Silver, solution of the pernitrate of iron, tannic and gallic acids, catechu, krameria, and haematoxylon are useless, and may be even injurious in acute dysenteric affections, but are often valuable in chronic forms.

The local treatment by topical applications to the rectum, or by flushing the entire canal below the ileocecal valve, has grown rapidly in favor in late years. The favorable reports with medicated solution have been due in large measure to the sedative action of the heat or cold, and to the mere removal of the irritating material from the surface of the mucous membrane. In the author's hands, no topical application has proved so efficacious in chronic dysentery as large enemas of nitrate of silver, one or two grains to the ounce.

Dietetic Treatment.—Although no article of food agrees so generally with these patients as milk, yet this diet needs careful watching. The stools should be examined habitually for undigested curds; and when these are present, the milk must be reduced in quantity, or given in another form, or abandoned entirely, at least for a time.

Meat.—In cases of long standing the patients are

¹ Dr. Councilman's paper will appear in full in an early issue of the Journal.

always anaemic, and full nutrition is essential. In no way can this indication be met so well as by meat, in an easily assimilable form, such as scraped meat, raw or partly cooked, salted and peppered to the taste of the patient; or, when bread can be digested in small quantities, scraped-meat sandwiches with the thinnest possible layers of bread, or even tender cooked meats in the usual form, when the patient can be relied upon to masticate them perfectly.

TREATMENT OF ACUTE DYSENTERY BY ANTISEPTIC COLON AND RECTAL IRRIGATION,

by Dr. W. W. JOHNSTON, Washington.

The adoption of a rational and successful plan of treatment in dysentery must be based upon a consideration of

(1) The localization of the disease in the colon and rectum.

(2) The intensity of inflammatory process, and rapid infiltration of tissues.

(3) The tendency to early ulceration, and to necrosis and extensive destruction of tissue; the decomposition and retention of decomposing solids and fluids in the bowels, with the resulting danger of auto-infection.

(4) And lastly, the probable dependence of all these conditions upon the introduction of a parasite, which finds its most favorable field for growth and multiplication with the resulting production of a chemical poison in the colon and rectum.

The condition of the colon and rectum in dysentery:

Retention of decomposing fluids within the rectum, from imperfect emptying of the cavity and spasmodic contraction of the sphincter; rectum is never completely emptied.

Advantages of the irrigation treatment in this connection.

Reference to the history of the treatment of dysentery by (a) cold and warm water irrigation; (b) by antiseptic irrigation. Reference to recent successful reports on this method of treatment.

Methods of irrigation and antisepsis of the colon and rectum. Injection, not irrigation.

DR. DABNEY's paper on

HEPATIC ABSCESS

was based chiefly on a study of 108 cases of this disease, which had been collected from various sources. When considering the causes of this affection, however, he called attention to the great rarity of any connection between diseases or injuries of the head or of the bones and abscess in the liver.

It would appear also, from the cases which he has collected, that while a large proportion of hepatic abscesses are due to diseased organs connected with the portal system of vessels, there is also a large proportion in which no evidence of disease or injury of any of those organs was forthcoming.

So far as any light can be obtained from an analysis of these cases, it would seem that the abscesses due to dysentery may be either large or small, single or multiple, and that very little information can be obtained as to the number and size of the abscesses in a given case from a knowledge of its cause. He states also that abscesses due to injury are not as apt to be adherent to the abdominal walls as would naturally be supposed, nor are there any definite symptoms or signs which will show whether such adhesions exist in a

given case. Pain and tenderness and œdema of the skin over the liver, which have been thought to show the presence of adhesions to the abdominal wall, were absent in some of the cases which he collected in which adhesions existed; and, on the other hand, they were present sometimes when there were no adhesions.

In considering the symptoms and signs of hepatic abscesses, he calls attention to the fact that large abscesses may exist without giving rise to any symptoms or signs during life; and he shows by reference to cases occurring in his own practice and to others reported by Councilman and Laffleur that aspiration sometimes fails to reveal the presence of pus even when a large needle is used and the abscess cavity is entered by it. He refers also to the influence of the number of abscesses which may be present or the propriety and result of operative measures of treatment, and considers free incision and drainage indicated in all cases where pus is present, unless it is being freely discharged, and there are no evidences of absorption, or unless the patient's general condition is such that no operative treatment even of the simplest character, would be safe.

He compares the results of aspiration on the one hand, and incision and drainage on the other, and shows that the latter is by far the best mode of treatment.

SECOND DAY, WEDNESDAY. — AFTERNOON SESSION.

A CASE PRESENTING THE SYMPTOMS OF LANDRY'S PARALYSIS, WITH RECOVERY,

by DR. F. T. MILES, of Baltimore.

A man aged thirty-three, well built, rather corpulent than muscular, temperate in all his habits, and accustomed to lead a quiet life; previously in good health. On November 26, 1891, he took cold. On November 28th, he got wet by rain. During this time he had at intervals pain in the calf of the leg. About December 1st he observed "a cold feeling across his toes, also the same cool feeling in the left upper lip." December 6th, on attempting to go up-stairs, found he had not power to raise the left leg from one step to the other without serious exertion in the way of dragging it. In a few days took to his bed, being unable to "hobble around any longer." The feeling of coolness and numbness continued to get worse and to extend upwards on his legs to the knees and also invaded the hands and arms to the elbows, the muscular power steadily failing from the lower extremities upwards.

On December 17th his condition was as follows: The lower limbs completely paralyzed, but not emaciated or flabby. The muscles of the trunk and belly were greatly weakened. Hands and arms quite weak, with a tendency to the position of wrist-drop. Shoulder movements good. The face was not affected. Sensation was apparently normal except that the sense of tickling in the sole of the foot was nearly or quite lost.

Power of localizing correctly any point of the foot touched was retained. Farado-cutaneous sensibility apparently normal. Could distinguish hot and cold objects. No pain elicited on pressing the muscles. Reflexes, both superficial and deep, completely lost. To the faradic current the muscles responded normally. To the galvanic current the muscles responded normally, contracting quickly without a sign of degenerative reaction, with no quantitative or qualitative al-

teration. The muscles also contracted from nerve stimulation. The sphincters absolutely intact.

After this, for three or four days, paralysis increased in the upper extremities until he could no longer use his hands. The abdominal muscles became so weak that he could not cough. The facial nerves now became involved in all their branches, most markedly on the left side. He could not frown, could not close the left eye, could not whistle. His breathing became oppressed and he had several attacks of threatened suffocation. The heart was not affected either in frequency or force.

At this point the progress of the disease seemed to be arrested; and then improvement, especially of the respiratory symptoms began, and proceeded somewhat rapidly, the face and arms recovering first. On the first of January, 1892, he could raise himself in bed; on the 7th, sat up on the side of the bed; next day, dressed himself; on the 14th, was able to walk alone; and on the 20th, was able to leave the house. About a month later his limbs were not thinner than natural, though still a little weak. The patella reflex was still absent.

A CASE SHOWING THE SYMPTOMS OF LANDRY'S PARALYSIS, RECOVERING,

by ALEXANDER MCPHEDRAN, Toronto.

George E. W., a clerk, aged twenty-six. With the exception of malarial fever fifteen years ago, has always been healthy.

His present illness began December 2, 1891. For three or four days before this, he noticed some uncomfortable sensations in the feet, which he supposed due to his boots. On the evening of December 2d, after stooping to close the safe, he found it difficult to rise again to the erect position. Next morning, on rising he found his legs very weak; was able to dress and walk down-stairs, but had immediately to lie down on a sofa. While dressing, he first found trouble in his hands; some muscular pains in forearms and shoulders. Electrical reaction normal.

December 4th. Paralysis of all the extremities complete; those of trunk and neck also involved, so that the head could scarcely be raised from the pillow. Speech, swallowing and breathing unaffected; sensation normal; bladder and rectum acted normally; knee-jerk absent.

December 10th. No change noted in symptoms until to-day, when speech became somewhat thick.

December 12th. Swallowing slightly affected, so that there was considerable difficulty in taking soft food. This difficulty soon improved and disappeared in a few days.

December 13th. Some pain in lumbar region; relieved by heat. It recurred frequently for a week.

December 20th. Reflexes still absent; no wasting; no tendency to bed-sores; able to move the hands and forearms slightly.

January 1, 1892. Power of motion has returned in all the extremities to a slight degree, being most advanced in the upper. He is able to maintain the sitting posture in an arm-chair, and can hold the head erect for a few minutes without support. Knee-jerk quite distinct in right and very slightly developed in left knee.

February 3d. Able to walk a few steps unsupported; uses his hands freely, though the muscular power is still very weak.

He continued to improve and was soon able to walk freely; knee-jerk became somewhat exaggerated; no ankle-clonus. Sitting with his elbows resting on the arms of his chair and fingers extended, there was marked tremor of forearms and hands while the position was maintained.

April 20th. Looks vigorous and walks well, but if he allows the knees to bend much they give way under him; knee-jerk increased. Electrical reaction continued normal throughout. The spleen could not be felt at any time, although the area of dulness was slightly increased.

DR. CHARLES CAREY reported a case presenting the same line of symptoms as the other cases reported, except that there was involvement of the sphincters, and the pulse ran up to 130 beats per minute. The paralysis began in the lower extremities, below the knee, and crept up gradually, the abdominal muscles and both upper extremities becoming involved. There was much respiratory difficulty; deglutition as well as articulation became absolutely lost; she was able to whisper, but there was no phonation. There was no loss of sensation. This patient has made a complete recovery, improvement beginning above and gradually extending down the entire body. The case was seen by several eminent specialists, who all agreed that it was a case of so-called Landry's paralysis, or acute ascending paralysis.

DR. W. H. THOMPSON: It seems to me that the involvement of the sphincters rather excludes this case from Landry's paralysis. I have had one case in which the usual course of rapidly-developing ascending symptoms, ending in death, occurred, and in which nothing in the shape of peripheral neuritis nor any centric lesion was found by Professor Delafield, who made the post-mortem. A case now in Bellevue Hospital has an interesting history. He was paralyzed first in the left leg, then in the right, then in the lower part of his body, then in both arms; then difficult respiration occurred, and there was entire paralysis of the lower jaw. No trouble with micturition or bowels. These symptoms all passed off, except some weakness in mastication and moderate weakness in the upper extremities, the right being more affected, and permanent weakness in the lower extremities. His gait is neither ataxic nor paraplegic.

A STUDY OF ANESTHESIA AS A GUIDE TO THE LOCALIZATION OF LESIONS IN THE LOWER SPINAL CORD AND CAUDA_EQUINA,

by DR. M. A. STARR, New York.

Necessity of careful examination for small areas of anesthesia in lesions of the lower spinal cord.

Collection of eighteen cases (six original), in which small, peculiarly shaped areas of anesthesia were present, and in which the situation of the lesion could be determined either by autopsy, or at operation, or by other symptoms.

From these cases an attempt is made to assign to each segment of the sacral and lumbar segments of the cord, the area of body surface from which it receives tactile impressions. Diagrams were distributed.

A STUDY OF THE SEASONAL RELATIONS OF CHOREA AND RHEUMATISM FOR A PERIOD OF FIFTEEN YEARS (1876-1890),

by DR. MORRIS J. LEWIS, Philadelphia, Pa.

(1) Study based upon the months of onset of 1,383

separate attacks of chorea and 673 separate attacks of acute inflammatory rheumatism; 666 of the attacks of chorea occurred in Boston, the rest in Philadelphia.

(2) Comparison made with the meteorological records of Boston and Philadelphia during the same period of time.

(3) Chorea and rheumatism evidently seasonal diseases.

(4) Fewest attacks of chorea occur in October and November, and the greatest number in March and April.

(5) The greatest number of attacks of rheumatism occur in April, and the fewest in the autumn months.

(6) Considerable resemblance, in general form, of the tracings for the diseases in question to the tracings showing the number of "storm centres" passing within 400 miles of the two localities mentioned; also marked resemblance to tracings showing mean actual barometer and mean relative humidity.

(7) Close resemblance of chorea and rheumatism tracings to the record showing the monthly variation in the amount of general sickness in the community; relation probably not one of cause and effect, but both conditions due to same cause.

(8) Over-study considered a predisposing, not an exciting, cause of chorea, acting in conjunction with meteorological conditions, probably the most active etiological factor.

DR. M. A. STARR: The points that have been brought up by Dr. Lewis are pretty fully covered by statistics which I have kept for the past four years at the Vanderbilt Clinic, New York. The tables that the doctor has presented coincide quite closely with the chart that I have prepared from these cases of my own. The doctor's highest month is March; my highest month is April; his lowest months are October and November; my lowest month is December.

Regarding etiology, it seems to me that over-study is not a very decided cause of chorea. I see very few cases amongst the classes who do the most studying. I find that 65 cases are decidedly assignable to fright. We cannot trace all causes of this disease to weather nor to mental work, but must look for a number of etiological factors.

As regards rheumatism, eighteen per cent. of my cases had a distinct history of rheumatism preceding the attack of chorea. The heart was found to be normal in 199 out of 356 cases. An organic murmur was found in 64, a functional murmur, subsequently disappearing, in 56, and the heart was not examined in 37.

It seems to me that the reason why chorea occurs mostly in the lower classes and in the spring of the year is to be found in the fact that in spring those elements which are likely to produce disturbances of nutrition then culminate, — the confinement, more or less physical and mental strain, etc.

DR. S. WEIR MITCHELL: The class of cases that we deal with at the clinic of the Infirmary for Nervous Diseases is so much above the tenement-house class that the conditions that apply to one would hardly apply to the other. It is the mechanic class and those a little above them with which we have to deal, and they live in Philadelphia in an atmosphere of comfort not enjoyed by that class in any other city. I am still in doubt as to the complete etiology of the disease, but think Dr. Lewis's paper a great advance upon any knowledge we have had hitherto. I hardly believe that mental strain has much to do with the

matter. The conditions stated by Dr. Starr ought to apply more strongly to the class of blacks, and yet chorea amongst the blacks is practically unknown.

DR. HENRY: In studying the relations between chorea and rheumatism, it must be remembered that there are other manifestations of rheumatism than the articular. It is universally admitted that tonsillitis is a manifestation of rheumatism. It is believed by some that certain skin eruptions, especially erythema nodosum, is a manifestation of rheumatism. If these things are borne in mind, I think the relation between chorea and rheumatism will be found to be more intimate than at present appears.

DR. JACOBI: I believe Dr. Starr to be correct in attributing the predisposition to chorea not so much to over-study alone as to the results of over-study and similar causes. As a rule, we find that choreic patients are either underfed or are hydramic or in a condition of ill-nutrition. In the spring time the system of every one is run down, not so much by over-work but because during the winter windows are not opened and people are less exposed to fresh air.

For many years I have been of the opinion that chorea minor is to be attributed largely to acute rheumatism. Many cases of rheumatism in childhood are not diagnosed. Many of these cases have no articular symptoms. I have seen many cases in which chorea was the first symptom to appear. I have seen three or four cases in which there was an alternation between choreic and rheumatic symptoms. The so-called "growing pains" that come on every few months are often the results of rheumatism.

DR. H. M. LYMAN: In my own clinic my experience coincides with that of Dr. Starr, namely, that while the majority of cases are sickly, they are not of a class who are worrying their brains with study. In almost all cases there is a history of consumption or rheumatism or of some other cause of debility preceding the outbreak of chorea; not necessarily in the child itself, but a hereditary precession of such causes.

DR. M. J. LEWIS: The children coming to the Infirmary with chorea belong to an unusually intelligent class, and are themselves, as a rule, very intelligent.

In my experience with chorea I have seen only four colored children affected with the disease.

The rheumatism records are taken from the Pennsylvania Hospital and are all from adults. They are not taken from the same cases as chorea.

I do not see why, if the disease is due to under-nutrition it should develop just at the time in the spring when the windows are opened and the children allowed to breathe the fresh air.

DR. W. H. THOMPSON: If fright, as Dr. Starr intimates, is an element in etiology, then the statistics given us would go to show that there are more people frightened in April than in any other time of the year.

DR. MUSSER: It has occurred to me that the difference in the number of cases of chorea in different seasons of the year might partly be accounted for by the diet of the patients; thus, as winter comes on, the diet of this class of people changes almost entirely, and they live on starchy foods and meats. As a culmination of this starchy diet, the confinement of the winter and bad hygienic conditions we have the development of a large number of these cases in the early spring. As they begin to use fresh succulent vegetables and take more fluids the curve for these diseases falls.

(To be continued.)

AMERICAN MEDICAL ASSOCIATION.
SECTION IN THE PRACTICE OF MEDICINE.

FIRST DAY, TUESDAY, JUNE 7TH.

THE RELATIONS OF BACTERIO-CHEMICAL RESULTS
TO PROPHYLAXIS AND THERAPEUTICS,

was the title of a paper by DR. ROBERT T. EDES, of Boston, Mass.

The great progress of the year has been along the line of investigating the poisons which are the result of germ activity, their nature, and their effects. It has been shown that many germs produce an alkaloid, and as well a poisonous albumin or albumose. Fever itself was undoubtedly the result of some such substance, which acted by its influence on the heat-centres.

Researches also had recently been carried on regarding the absorption of nitrogen by plants from the air. It had always been supposed that this element was derived from the soil in plant formation; but certain plants, especially the bean family, can grow in a soil entirely devoid of nitrogen and yet form nitrogenous compounds. This property seemed to depend on the presence on the plant, or rather on its surface, of a certain bacillus.

Another most important topic which had received attention during the year had been that of immunity. We had come to believe that much depended on the condition of the blood, either its fluid elements (possibly blood-germs) or the leucocytes, more probably the latter. Furthermore, the products of germ action (toxine) seem, after reaching a certain degree of strength, to inhibit their own activity. An analogous illustration was seen in the power of a certain percentage of alcohol to check fermentation, though it was a product of the latter. Such a method was as yet unavailable in the human system. Koch's tuberculin was not to be condemned as a failure. It was an attempt along a line which is likely soon to witness a great and fruitful development. Closely allied to the doctrine of immunity is that of resistance to disease. We do not know why some persons can meet with impunity an exposure to which others would succumb. Animals, if starved, will be overcome by an amount of bacterial poison without effect if they were properly nourished; and, furthermore, over-feeding will enable them to withstand a much greater dose of the disease-poison. There is in each system a certain protective element which comes in contact with the product of our usual contagious diseases and destroys the toxines of the latter, thereby protecting the system from the further inroads of the same kind of poison, but rendering it more liable to succumb to other kinds. So far as treatment was concerned, emphasis was to be laid on two special points. There was great danger from the flesh and milk of tubercular animals. There was not, in the writer's opinion, much risk from mere association with phthisical patients. The latter should be cautioned against scattering their sputa around. Special attention should be paid to nutrition and climate. So far as the latter had reference to lung cases, a lofty, dry place was preferable, because the air was relatively free from germs. It also acted as a general tonic, and the increased pulmonary activity it occasioned was in itself a favoring circumstance.

All of these questions had to be looked at from a different stand-point so far as the scientific worker was to be compared with the chemical student. The pro-

blems of the sick-room were not those of the laboratory. It was difficult to free clinical work from personal errors, but we should faithfully report our results, good or bad.

IMMUNITY.

DR. KINSMAN, of Ohio, gave an account of some experiments which had been made in that State with reference to hog cholera. Immunity is, he thought, only a relative term. Our ideal should be absolute protection. Our present trouble is that our doses of remedies strong enough to kill the germ or inhibit the products of its life activity are also strong enough to harm the patient. In several of the Western States attenuated cultures of the hog cholera-germs were given to animals, with good results. They could then be pastured in fields and thrive where uninoculated animals speedily died. The culture medium used in the experiments detailed by the speaker was sterilized human urine. The fluid inoculated was diluted to about one-sixth of its original strength, the cultures being kept at blood temperature, and the sterilization of the urine being accomplished by the customary methods.

The fact was that in many of our investigations we did not know exactly what the cause of the disease was, and hence, while we approximated toward perfect immunity, we could not quite reach it.

DR. W. J. SCOTT, of Cleveland, O., thought there was some doubt as to whether in our dilution by attenuated virus we are not also altering the nature of the poison, so that we have to deal with a morbid principle different from the one which is the result of the first generation of germs. As regards the effect on the body temperature, anything which disturbs the relations of the system and the products of nutrition and waste will cause increased chemical activity, and that we know is always a source of heat.

DR. DENISON, of Colorado, had recently received a letter from Koch, of Berlin, in which the latter disclaimed ever having admitted that tuberculin was a failure. The speaker himself had unbounded faith in its future. He also alluded to recent experiments made with a piece of the thymus gland as a culture fluid. Tetanus germs had in fourteen days been rendered from three to five thousand times less powerful than the original cultures.

DR. GREENWOOD, of Kentucky, did not believe that hog cholera was altogether a contagious disease. It would skip about from one farm to another in a given locality, while animals on intervening farms were not affected. In one instance live hogs ate the bodies of their kind who had died of the cholera, and the disease was soon checked in the entire drove.

DR. S. P. KRAMER, of Cincinnati, reviewed the work which had been done by German observers during the past year with reference to immunity, laying special stress on the "anti-toxines" developed by adding to the blood of an animal one of the peculiar albumoses produced by bacterial action. If we could isolate the latter by injecting it, we could with the aid of the union with the blood cause immunity. In these experiments on animals there was always the danger that the attenuation product may revert to its original type, and so offer no stay to the ravages of the disease. It was interesting to know that if goats were thus rendered immune to tetanus, the immunizing principle appeared in the animal's milk.

ETOLOGY OF SPECIFIC DISEASE.

A paper with this title was read by DR. R. FRENCH STONE, of Indianapolis, Ind. It was a historical review of the various theories which have prevailed in times past with reference to the exact nature of specific disease. He took strong ground against the wholesale acceptance of the present products on the germ theory of disease.

RECENT INVESTIGATIONS OF THE ETOLOGY OF DIABETES MELLITUS,

was the title of a paper by DR. S. P. KRAMER, of Cincinnati.

No less than twenty-seven theories had been put forth with reference to the cause of diabetes; it had been found that the pancreas was at fault in fully one-half of all the cases. The removal of the organ in animals was always followed by the malady. If it was partially removed, the disease remained absent, providing one-tenth of the original bulk of the organ was left *in situ*. Ligation of the duct gave negative results. These results, seen in dogs, were duplicated in cats and swine, but not in birds. In dogs in whom the malady supervened after the removal of the organ, if they were fed on pancreas no relief ensued, but the latter did follow if bits of the organ were transplanted back into the interior of the abdominal wall; if they were fed on glucose it was used up in the system and none excreted, but not so with codose. As the result of a long series of experiments, Dr. Kramer expressed the belief that the organ supplied to the blood a glycolitic ferment by which the sugar in the blood was destroyed, but if the viscous was removed the absence of the ferment, which resided chiefly in the white cells of the blood, caused the glycosuria. He did not offer this as an exclusive view, the ferment was found in the blood at its maximum four or five hours after removal from the animal. Normally, the sugar of the blood combines with some albuminous principle therein for the general benefit of the system. In diabetes this does not take place.

HEPATIC ABSCESS.

DR. GEORGE E. FELL, of Buffalo, related a case of hepatic abscess in diabetes. The pus eventually opened into the gut and the diabetes disappeared. This was evidence, in his opinion, the lesions of the pancreas were not the only factor in etiology.

DR. S. SOLIS-COHEN, of Philadelphia, quoted the division of diabetes by a recent French writer into thin cases and fat cases. The pancreatic cases were in thin people, but not in the fat people. There was still another form, related in some way to the uric acid diathesis. Moreover, nowadays, the polydipsia and polyuria were more dreaded than the glycosuria. There was a malignant combination of the two former causing a fatal result even with no sugar. There was probably a group of cases here alike clinically, but differing in their etiology.

INFLUENZA.

DR. JOHN E. LINK, of Terre Haute, Ind., read a paper on "la Grippe," in which he took the ground that the disease was not a germ disease, but one spending itself principally on the pneumo-gastric centre in the medulla. He thought that all the various aspects of the malady could be explained by this view. He had noted many cases with a peculiar paleness of the

face, a milky whiteness of the tongue, and great prostration, with occipital pain, even before any active grippal manifestations came on. They had all yielded promptly to quinine and opium, but after recovery, if the former drug was stopped too quickly, they suffered severe relapses. Dr. Link doubted whether there were any real inflammatory or congestive properties belonging to true grippe. He believed we might have an inflammatory neurosis, say of the lung and bronchial tissue, with abundant serum, but it was not pneumonia. In many cases the out-pouring of the serum into the air-cells led to the death of the tissue and abscess formation. The physical signs were not like those of pure pneumonia. There was a loud moist râle in addition to the crepitus of pneumonia.

A MODIFIED FORM OF CONTINUED FEVER FOLLOWING THE EPIDEMIC GRIPPE,

was the title of a paper read by DR. JOHN H. HOLLISTER, of Chicago, Ill.

This disease had seemed to increase the severity of all our endemic maladies. He had observed following the epidemic, many cases of continued fever which had been admitted to hospital classified as typhoid. He soon began to doubt the correctness of the diagnosis. A study of fifty cases had afforded the following data: No common cause could be assigned. Previous history was negative. Some had had grippe, but the majority not. The prodroma lasted four days, with extreme muscular soreness. The onset was gradual, no chill being noticed, but the fever was continuous without intermission. The average duration was twenty-three days. Relapses were common, but could be attributed in many cases to dietetic errors. There were no head symptoms or coma, and no subsultus. In four cases there was profuse sweating, lasting over ten days. The stomach was not troublesome. Secretions were all diminished, and there were no cutical discharges. The mouth was rarely dry, tongue not fissured, and no sordes. The dorsum was milk white. There was no tympanites or abdominal tenderness; no peritonitis, while the bowels were bound up. In only three cases did the stools suggest typhoid. No bacteria were found in the stools. The urine did not respond to the Ehrlich test, nor were any albumen, sugar or casts found. There was no rash. Dr. Hollister did not believe that the disease was typhoid. In treating the cases main reliance was placed on sponging and packs. Three cases died, one from pneumonia and two from exhaustion. No intestinal lesions were found at any of the autopsies.

The paper was also discussed by DRs. DIDAMA, of Syracuse; CRONYX, of Buffalo; HERMENWAY, of Illinois; DAVIS, JR., of Chicago, and WILSON, of Michigan.

(To be continued.)

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS MEETING.

THE Annual Meeting of the Councillors was held at the Medical Library, Boston, on Tuesday, June 7, 1892, at 11 o'clock, A. M., the President, Dr. Amos H. Johnson, in the chair.

One hundred and twenty-two Councillors were present.

The Secretary read the names of 119 new, and of 47 deceased Fellows.

The Treasurer, Dr. Forster, reported the receipts for the year ending April 15th including the balance on hand at the beginning of the year to have been \$12,318.63; and the expenditures, \$10,456.98; leaving a balance of \$1,861.65. The report was accepted.

The Committee on Membership and Finances recommended, and it was voted, that \$1,400 of the surplus in the treasury be distributed among the District Societies.

On recommendation of the same committee, Fellows were allowed to resign, to become retired members, and to have dues remitted. Others were dropped from the roll for non-payment of dues.

The Committee on Publications presented their report. They announced Dr. William Osler of the Johns Hopkins Hospital, Baltimore, Md., as the Shattuck Lecturer at the annual meeting of the Society in 1893.

The Committee on Medical Diplomas recommended, and it was voted, that the following be added to the list of colleges whose diplomas are recognized for admission to the Society: Berkshire Medical College (prior to its closure), Medical Department of the University of Minnesota.

The Committee on the By-Laws of the District Societies recommended, and it was voted, that any proposed alteration or amendment of the By-Laws of any District Society be referred to the committee before such alteration or amendment is adopted.

The committee appointed to consider the petition of the Massachusetts Society for the Prevention of Cruelty to Animals, regarding vivisection, reported through Dr. H. P. Bowditch, as follows:

Whereas, the Massachusetts Society for the Prevention of Cruelty to Animals has asked for some official action on the part of the Massachusetts Medical Society, in the form of a resolution, or otherwise, as to whether in their judgment any law, and, if so, what law, should be enacted by our legislature to restrain or limit the practice of vivisection by physicians, medical or other students, or pupils in medical or other colleges or schools, therefore,

Resolved, That the Councillors are not aware that vivisections are practised in this State in an unnecessary or cruel manner.

That the existing statutes furnish sufficient security against cruelty in vivisection, as well as against cruelty in general.

That experience has shown it to be very undesirable to impose restrictions of any kind upon the advancement of medical science by the researches of properly qualified persons.

That, in view of the above facts, it is, in the opinion of the Councillors, inexpedient to legislate upon this subject."

(These resolutions were passed in concurrence by the Society, on June 8th.)

The Librarian, Dr. Brigham, presented his annual report.

The following, as presented by the Committee on Nominations, were elected to the offices of the Society for the ensuing year: President, Dr. James C. White, of Boston; Vice-President, Dr. Francis A. Howe, of Newburyport; Treasurer, Dr. Edward J. Forster, of Boston; Corresponding Secretary, Dr. Charles W. Swan, of Boston; Recording Secretary, Dr. Francis W. Goss, of Roxbury; Librarian, Dr. Edwin H. Brigham, of Boston; Orator, Dr. J. T. G. Nichols, of

Cambridge; Anniversary Chairman, Dr. George W. Gay, of Boston.

Voted, That the next annual meeting of the Society be held in Boston, on the second Wednesday in June, 1893.

The following Standing Committees were appointed: Of Arrangements: Dr. J. T. Bowen, Dr. H. Jackson, Dr. J. Homans, 2nd, Dr. F. M. Briggs, Dr. J. C. Munro, Dr. A. Thorndike.

On Publications: Dr. G. C. Shattuck, Dr. B. E. Cutting, Dr. O. F. Wadsworth.

On Membership and Finances: Dr. F. Minot, Dr. F. W. Draper, Dr. J. Stedman, Dr. E. G. Cutler, Dr. L. R. Stowe.

To Procure Scientific Papers: Dr. H. P. Walcott, Dr. H. L. Burrell, Dr. L. Wheeler, Dr. F. H. Zabriskie, Dr. S. B. Woodward, Dr. C. W. Townsend.

On Ethics and Discipline: Dr. G. J. Townsend, Dr. G. E. Francis, Dr. F. C. Shattuck, Dr. C. G. Carlton, Dr. E. Cowles.

On Medical Diplomas: Dr. E. J. Forster, Dr. F. H. Hooper, Dr. H. E. Marion.

A petition from Dr. M. E. Webb and others for a change in the boundary line between Norfolk and Suffolk Districts was referred to the Presidents of the Middlesex South, Norfolk and Suffolk District Medical Societies, to report at the next meeting.

A communication from the Bristol North District Medical Society concerning the inadequacy of fees for the commitment of the insane was referred to Drs. C. F. Folsom, F. A. Hubbard and F. B. Harrington, as a committee to report at a future meeting.

A communication regarding the bill to create a Cabinet Officer of Public Health was referred to Drs. H. P. Walcott, S. W. Abbott and Henry Jackson as a committee to report at a future meeting.

Drs. E. N. Whittier, J. O. Marble and F. W. Chapin, were appointed a committee to report at the next meeting regarding the Pan-American Medical Congress.

Dr. Williams presented an account of the life and labor of the late Sir William Bowman, an honorary member of the Society. It was voted, that Dr. Williams be empowered to prepare and send to the family of the deceased resolutions of condolence.

The Council adjourned at 12.20 p. m.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. O. SEARS, M.D., SECRETARY.

MEETING of March 14, 1892, the President, DR. FREDERICK I. KNIGHT, in the chair.

DR. J. W. FARLOW reported

A CASE OF SUDDEN DEATH IN A RUBBER FACTORY: INQUIRY INTO THE EFFECTS OF THE INHALATION OF NAPHTHA.¹

DR. E. S. WOOD: Within the past year a case of this kind came under my observation, a legal case, in which a boy employed in the rubber works in South Boston, it was claimed, had not been warned in regard to any unfavorable effect which the naphtha vapor might have upon him. His work was to regulate some part of the machinery intended for pressing the

¹ See page 621 of the Journal.

rubber. The rubber was placed in the tank in which were forty gallons of naphtha, and allowed to remain until it had become of suitable consistency, that is, it was largely dissolved; no bisulphide of carbon was used. Then this solution was allowed to flow slowly from the tank between a couple of rollers, and there rolled into sheet rubber. When the rubber was rolled out into sheets and as it was poured between the rollers there was a large surface exposed to the air, and a great deal of naphtha vapor escaped. This boy was directed to insert a wedge in some portion of the machinery near the cog-wheels, and his statement is that the room was not very well ventilated; at any rate, he was exposed to the action of an unduly large quantity of naphtha vapor. When he went to insert the wedge, where he was instructed to insert it, he became dizzy. To prevent himself from falling, he grasped at the first thing he could, and got his hand caught in the cogs, and received such an injury that it necessitated his being carried to the City Hospital and his arm amputated. This case went to trial and the jury disagreed. There did not seem to be any doubt in my mind but what the boy was made dizzy by the effect of the naphtha vapor, and the inquiries made at the refining works at Atlantic City have shown that the workmen employed at those departments of the work where there are large quantities of vapor are liable frequently to be made dizzy and have a species of intoxication, which may go so far as to produce complete unconsciousness. I have never seen any record of convulsions having been produced, but there are records of cases of unconsciousness, although the patients, as a rule, recover as soon as carried into the fresh air. There are some records which have been given showing that there may be even such an amount of cerebral disturbance as to produce a sort of acute delirium, from which the patient recovers as soon as carried into the fresh air; there is also the record that one of the superintendents at Point Breeze, although accustomed to inhale naphtha vapor, went to investigate a leak in one of the naphtha canals and was made unconscious in two minutes; and there are some statements recorded to the effect that an adult may be made unconscious in from two to seven minutes after the inhalation of a few grammes of naphtha vapor. The workmen employed in handling the light naphthas, gasoline, rhigolene, etc., in pouring by means of pails from the tanks into casks or barrels may inhale a sufficient quantity to be made dizzy, to have ringing in the ears, and more or less of the first symptoms of intoxication, and unconsciousness has been produced in those cases in workmen. I have seen a statement that death has occurred, although in the vast majority of cases recovery takes place immediately upon the patient being taken to the open air. Death has resulted from the unconsciousness produced in those engaged in cleaning the tanks in these refining works and working in confined spaces where there has not been proper ventilation.

DR. STURGIS: I have been rather interested in the workers in rubber factories for the last three or four years. All the cases have been chronic. I have not been able to deduce much from the cases I have seen. They generally occurred in the women engaged in making up gossamer cloth. The effect seemed to be cumulative. Girls would work some months or years before they were affected. The heart seemed to be most affected. There was a tendency to syncope and

a good deal of praecordial distress and palpitation on the least exertion. The pulse in most cases was very feeble, and the first sound of the heart sharp and short. Generally there was a hæmico murmur, and there may or may not have been a venous hum in the neck. Menstruation was generally scanty. A good many of the patients complained of dizziness. I found that the cases were all rather difficult to treat, did not yield to the treatment of ordinary anemia. Iron did not seem to do much good although the stomach was generally in good condition. I generally used Fowler's solution and manganese.

DR. KNAPP: I have seen quite a number of women working in the various rubber factories, but I have not seen any who presented any symptoms which I was disposed to ascribe definitely to naphtha. The majority of the cases have been cases such as we see very commonly in working women who do not work in rubber factories. They were anaemic and debilitated, neurasthenic, and complained of the ordinary run of rather indefinite symptoms. As a general thing, they seem to be underfed, living in rather poor hygienic surroundings, and most of them seemed to improve with considerable rapidity when properly fed and their supply of tea was cut off. Their trouble seemed clearly due to ordinary causes and not to naphtha. They were given an ordinary tonic. I recall now but one case where I thought the symptoms were due definitely to the work in the rubber factory. That was a man who had been working in a factory for some time and had been using in addition to the naphtha, bisulphide of carbon. He had some slight symptoms of pain and weakness and paraesthesia in the arms. It seemed to me a very slight multiple neuritis which I supposed was due to the bisulphide of carbon; it was more likely to be due to that than to the naphtha. He had a still slighter neuritis in the legs.

DR. G. B. SHATTUCK: I remember two patients at the City Hospital, girls who had worked in a rubber factory. They had marked anaemia and debility and a slight neuritis. They had not had to do with the bisulphide of carbon, and they did not respond to the treatment for anaemia.

DR. W. D. HODGES: I should like to mention the case of a man who was engaged in filling a receiver with gasoline, and after having almost emptied the barrel a leak was discovered in the receiver. He entered the gas-pit, which was six feet square, to stop it, and was immediately rendered unconscious. Upon removing him from the gas-pit consciousness soon returned.

DR. FARLOW: It is important to bear in mind when inquiring into the complaints of workers in rubber factories, that in some parts of the work considerable naphtha is used, for instance, in the room where cloth is covered with liquid rubber, while in other parts very little or no naphtha is used and the symptoms must be due to something beside naphtha.

SPECIMENS.

Dr. Farlow showed a myxo-sarcoma which he had removed from the left nostril of a patient thirty-two years of age. A year ago there was evidence of ethmoid disease, but no tumor. The growth was removed with the cold snare and hemorrhage was profuse. He also showed a very large piece of adenoid growth which he had removed by forceps from the vault of a child four years old.

Recent Literature.

Treatise on Gynecology, Medical and Surgical. By T. POZZI, M.D. Translated, and with additions, by BROOKS H. WELLS, M.D. Vol. II. William Wood & Co. 1892.

When the first volume of this work appeared about three months ago, we reviewed it, and expressed our high opinion of its value, as the best exponent of the best teaching of the French school. This second volume completes the book, comprising four chapters on Inflammation of the Uterine Adnexa, five on Neoplasms of the Uterine Adnexa and Ligaments, three on Genital Tuberculosis, Intra- and Extra-Peritoneal Pelvic Haematocele and Extra-Uterine Pregnancy, four on Diseases of the Vagina, seven on Diseases of the Vulva, three on Malformations of the Genital Organs, and two on Diseases of the Urinary Tract, Rectum and Pelvis.

Diagnosis and Treatment of Hemorrhoids and other Non-Malignant Rectal Diseases. By W. P. AGNEW, M.D. Second edition. San Francisco, Cal.: R. R. Patterson, publisher. 1891. 148 pages. Illustrated.

This book is concisely, attractively written, and is intended by its author to present in plain, comprehensive language methods of treatment of the affections designated in its title, which are of actual value and can be depended upon to accomplish what is claimed for them by their advocates. It is an interesting work. Its chief feature is the importance and value assigned by its writer to the use of carbolic acid for the radical cure of hemorrhoids and fistule. The book is well written, the facts and details clearly, very accurately stated, so that the reader will have no difficulty in understanding or testing the methods recommended. It seems worthy of a careful perusal.

A Treatise on Diseases of the Lungs and Pleura. By the late WILSON FOX, M.D., F.R.S. Edited by SIDNEY COUPLAND, M.D., F.R.C.P. Philadelphia: P. Blakiston, Son & Co. 1892.

It is difficult to estimate the amount of labor which Dr. Fox has expended in preparing this volume. Not only is each article written in fulness and attention to detail which makes the book practically unique in its field, but the text is enriched by such copious references to other works and to periodical literature as to give a very complete bibliography of each subject. In fact, such references are so frequent from the author's evident desire to do justice to others as to suggest a compilation, but to quote the preface "his reputation as a clinical observer and a profound pathologist is too well established to be affected by any mistaken inference from this characteristic of all his writings." As was to be expected from Dr. Fox's special interest in the subject, the article on Pulmonary Tuberculosis would be particularly thorough, and it occupies over a third of 1,200 pages, but those on pneumonia and pleurisy are also very complete, and the same care is seen in the preparation of the shorter chapters. Dr. Fox speaks with the authority of a large clinical experience and wide reading, and his book deserves to become a classic. Whatever additions have been rendered necessary by investigation and discoveries since the author's death, to bring the text up to date, have been made by the editor.

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URINARY INFECTIONS.

The urine contained in the bladder and kidneys of a man in perfect health is aseptic. The urethra is normally inhabited by germs, which may contaminate the urine in its passage outwards. The microbes of the urethra are bacilli and micrococci, inoffensive under some circumstances, pathogenic in others. The *staphylococcus pyogenes aureus* is one of these micro-organisms of the urethra. Purulent urine, from an inflamed urethra, bladder or kidney always abounds in micro-organisms: among these are especially to be mentioned the *staphylococcus aureus*, *albus* and *citreus*, the *streptococcus pyogenes*, the *uro-bacillus liquefaciens septicus*, and the *bacillus non-liquefaciens*. The latter, says Guyon, has a preponderant rôle in urinary infections. Halle and Albaran describe it under the name of *pyogenic bacterium*, Guyon thinks it identical with the *bacterium coli commune*.

These microbes may exist in morbid urine either singly or associated; two, three, or more species infecting the same bladder. The gonococcus of blennorrhagia and the bacillus tuberculosis are also met with in the urinary passages under circumstances of specific infection.

The micro-organisms found in purulent urine are to be regarded as the agents of the suppuration which they accompany. This appears to be a fair inference from all the facts which have been accumulated by a multitude of observers the past thirteen years. All these pyogenic bacteria have the property of producing pus in the subcutaneous cellular tissue; all are capable of causing cystitis; the injection of their pure cultures into the bladder under circumstances of temporary retention, or traumatism of the mucosa, provokes suppurative cystitis.

The micro-organisms may find access to the urinary apparatus in two ways: they may come from the outside environment and penetrate the urethra, ascending to the bladder and kidneys. This is direct primary infection, and is the rule. In other cases, the organism is first infected, and the kidneys are secondarily infected through the blood.

Spontaneous infection of the bladder in man does not exist (Guyon). In woman this is often observed, owing to shortness of the urethra and feeble occlusion.

In the pathological state, spontaneous infection is frequent in both sexes. Septic inflammation of the urethra propagates itself to the bladder. Oftener still, the infection is provoked. The bladder is contaminated by a urethral injection, by the introduction of a septic sound or catheter.

Whether the bladder may be infected by an aseptic catheter introduced through a normal ureter may, practically, be answered in the negative. The accidents of catheterism have, in fact, virtually disappeared, since sterilized instruments have been used.

Secondary infection of the urinary apparatus belongs to the pathological history of general infectious diseases. It begins with the kidney by one of those infectious nephritis described by Bouchard, and generally remains limited to this organ. Rarely it causes secondary cystitis by taking a descending course.

The penetration of the microbes into the bladder is one condition, but not the only condition of its infection. There must first be receptivity. Receptivity is created by divers causes. The most active are distension of the bladder, stagnation of the urine, traumasms of the mucosa, neoplasms. In order that the bladder may be contaminated some lesion, or at least stagnation of the urine, seems necessary. Microbes are often introduced into a normal bladder without, thereby, infection taking place; the first flow of urine sweeps them all away before they have time to begin their pathogenic action.

According to experiments of Guyon and Albarran, the injection of microbes into the bladder of a healthy animal is generally unattended with any morbid effect; but if you add retention from any cause, or if you wound and inflame the mucous membrane, infectious cystitis sets in.

As to how the microbes produce suppuration in the bladder — this is probably brought about directly by virtue of the pathogenic properties of the microbes (Guyon).

When suppuration is established in the bladder, it may long remain localized in this organ; this may be said to be the rule with cystitis. But cases are only too numerous where the pathogenic agent ascends along the ureter to the kidney, infecting that organ, producing a radiating nephritis, suppuration, and all the lesions of the surgical kidney.

The experimental demonstration of the pathogenic action of the microbes of the urine on the kidney, has been fully given. The injection of a pure culture of these organisms into the ureter followed by ligature of that duct constantly produces in the animal all the lesions of ascending suppurative nephritis. One of the most interesting portions of the little treatise of Albarran (*Etude sur le rein des urinaires*) is the chapter where he details these experiments. The microbes whose culture was made the material of experimentation were the *bacterium pyogenes*, the *staphylococcus*

aureus and *streptococcus pyogenes*. The animal selected was the hare; the left ureter was chosen, as being more accessible than the right.

By the side of suppurative pyelo-nephritis, of infectious origin, we must mention certain sclerous nephrites without suppurations whose microbial origin has been demonstrated by the histo-bacteriological study of the kidney in man. In certain cases, these sclerous inflammations follow experimentally simple ligation of the ureter practised without antiseptic precautions. The principal feature of pathological histology is the enormous proliferation of connective tissue, the nodulated, shrunken condition of the kidney in advanced stages. In the human subject, renal sclerosis is a frequent result of obliteration of the corresponding ureter by a calculus or tumor; it has been witnessed in connection with prostatic disease (Albarran).

Guyon affirms that it is of the first importance to remember that it is the stagnation of septic urine in the bladder that favors the ascension of microbes to the kidney, and that on the regular and repeated evacuation of the bladder depends, before all, the fate of the kidney. Suppuration of the bladder is of little consequence as compared with renal suppuration; the latter is always accompanied by serious disturbances of the general health, while the former may long exist without serious constitutional damage.

With regard to the pathogeny of the general accidents of infection, and of urinary fever in particular, the necessary condition for the appearance of these accidents is the infection of the urine joined to the existence of a solution of continuity pathological or traumatic.

These accidents may appear spontaneously without any provocation; generally, however, they come on as the sequel of a surgical operation, catheterism simple or traumatic, urethrotomy, etc.

It is to the absorption of the septic urine (microbes and the toxic products which they elaborate) that we must refer the urinous fever. The presence of urinary microbes (the pyogenic bacterium alone or associated with the suppurative staphylococci and streptococci) has been noted both during life and after death in the blood of patients suffering from urinous fever. Albarran has found both the *bacterium pyogenes* and the *bacillus liquefaciens* in the blood at the onset of a chill.

Experimentation has proved the infectious nature of the urinary accidents. The injection of a pure culture of the microbes habitual to morbid urine (*bacterium pyogenes*, *uro-bacillus liquefaciens*) into the serous cavities, pleura and peritoneum, generally causes the speedy death of the animal; at the autopsy the micro-organism is found diffused in the blood and all the organs. Injection into the blood produces the same general infection, and often, also, infectious nephritis.

Nothing can be more interesting than the chapters in Albarran's monograph¹ in which he details the numerous experiments which he has made on animals,

¹ *Etude sur le rein des urinaires*, Paris, 1891.

producing in them the entire symptomatology and lesions of urinary fever and infectious nephritis; experiments which an antivivisectionist sentiment would doubtless denounce, but which are fruitful in the addition of positive data to our knowledge. These results have been also admirably summed up in the exhaustive paper read by Professor Guyon to the recent French Congress of Surgery: "On the Pathogenesis of the Infectious Accidents in Urinous Diseases," a paper from which we have freely borrowed.

This secondary localization in the kidney of the infectious agent which has entered the blood under circumstances above mentioned, plays an important rôle in human pathology. There is no more formidable complication and termination of urinary diseases than this secondary infectious nephritis with its cortical miliary abscesses; it is called by Albaran and Guyon "descending nephritis" to distinguish it from the ordinary form where the infection is caused by ascent of the microbes from the bladder and ureter.

"We must," says Guyon, "admit along with the direct action of the microbe that of the toxic products which it elaborates in the urine of the bladder. These soluble products becoming absorbed are capable of giving rise to fever and the general constitutional symptoms, even where the microbe is not absorbed and diffused. The acute, grave form of urinary fever is due, assuredly, to true microbial infection of the blood. It is in these acute, fulminant, rapidly fatal forms that the presence of the micro-organism has been most often noted in the blood. At the same time, the appearance, so rapid and almost instantaneous, in some cases, of febrile accidents following repeated micturitions through a urethra which is the seat of lesion, their very short duration, their complete disappearance, justify the belief that a part of the symptomatology is due to soluble products. In these cases, the victory of the organism when it is complete, is, among other conditions, due to the healthy state of the kidneys. In those rare cases where death supervenes quite suddenly and with symptoms of great intensity, it is to the massive dose of the microbes absorbed and to their great virulence that we must attribute the fatality. Acute, prolonged urinary fever, with repeated attacks, indicates that the infection of the blood has been followed by secondary renal lesions. This is the theory which I maintained before the demonstration of the microbial nature of urinary poisoning, and which has always seemed to me to result from the interpretation of the facts. The renal lesions may get well in a considerable number of cases. It is, at the same time, the persistence and the profoundness of these lesions which cause death when it supervenes in the course of this grave form of urinous fever."²

THERE were 26 graduates at the annual Commencement of the Blackwell's Training School for Nurses, New York, which was held at Charity Hospital on June 15th.

² La Médecine Moderne, April 28, 1892.

MEDICAL NOTES.

TYPHUS FEVER IN RUSSIA.—Typhus fever is increasing in those districts of Russia which are suffering from the famine. This is especially true of Kasan, Astrakahn and many of the cities on the Volga.

INTERNATIONAL CONGRESSES IN RUSSIA.—With the sanction of the Emperor of Russia, there will be held at Moscow, during the current year, two international congresses: a congress on anthropology and prehistoric archaeology, to be held from the 13th to the 22d of August, and a congress on zoölogy from the 22d to the 30th of August.

CHOLERA IN PERSIA.—The mortality from cholera at Meshed, Persia, has reached 400 daily. The Persian government has placed a military cordon around Teheran. The Russian government is taking rigorous and extensive measures to prevent the spread of cholera into Russia.

SUNSHINE IN ENGLAND.—The lack of sunshine in the United Kingdom can be appreciated by reading an article by Mr. R. H. Scott, in *Longman's Magazine (Lancet)*, June 4th), in which he says, that in the matter of sunshine the Channel Islands bear pre-eminently the palm, being "the only region which records, on the average of ten years, sunshine for one-half the time the sun is above the horizon in any month, and this it does in May, with 52 per cent., and in August, with 55 per cent."

COGHILL VS. BONAPARTE.—This case, which has recently been tried in England, has received a good deal of attention from the daily press, even in this country. Dr. S. Coghill sued M. Clovis Bonaparte for attendance on himself for alcoholism, and on a lady who passed for his wife for what was described as "grave specific disorder of a highly contagious nature." The bill had been sent in, but not paid. The defendant was impudent, and conceived the idea not only of not paying the doctor's bill, but of making the doctor pay large damages by threatening an action for divorce against the woman who he maintained was not his wife, in which the plaintiff was to be made co-respondent. He drew such a picture to his so-called wife of an imaginary action that was to be commenced by Dr. Coghill, and that was only to be averted by money, that he got her to make what purported to be a confession of disgusting actions involving the plaintiff, and to part with all her jewels. She finally acknowledged in court that the documents were mendacious from beginning to end. The jury in their verdict declared that Dr. Coghill left court without the slightest imputation on his character.

NEW ENGLAND.

THE AMERICAN LARYNGOLOGICAL ASSOCIATION held its fourteenth annual congress in Boston during the first three days of this week. About twenty members were present. An interesting programme, consisting of eighteen papers, had been prepared. On

Monday and Tuesday a lunch was provided at the Athletic Club. On Monday evening, the annual dinner was held at the Parker House, and on Tuesday afternoon the Association went on an excursion to Plymouth.

THE LYMAN PRIZE.—The late Dr. George Hinckley Lyman was for twenty years a visiting physician to the City Hospital of Boston. Mrs. Lyman, in her wish to commemorate Dr. Lyman's great interest in the growth and development of the institution and his sympathy with the young men who leave it every year to practice the profession to which his life was devoted, has offered an annual prize of \$150 for an essay on any subject relating to medicine or surgery which the writer may select.

This prize will be open for competition to graduates of the City Hospital of *not more than three years' standing*, in January of every year, beginning with January, 1893. The senior members of the medical, surgical and gynecological staffs of the City Hospital, with the President and Secretary of the City Hospital Club, will act as a committee of award. Essays must be type-written, and must be sent to the Secretary of the City Hospital Club before January 1st. Each essay must bear upon the title-page an assumed name or a device, and must be accompanied by a sealed envelope containing the name and address of the writer. If no essay worthy of the full prize be received in any year or years, the committee shall be at liberty to award a smaller prize or prizes of \$50, \$75, or \$100. The amount which may remain will be added to the prize for the following year.

NEW YORK.

A PROLIFIC NEGRESS.—During the past week a negro woman now living in New York, gave birth to her twenty-fifth living child. She is about forty-two years of age, and when sixteen was married to the husband with whom she is still living. She was born in Richmond, and resided in Virginia until seven years ago. Among the twenty-five children there have been no twins or triplets.

PUBLIC SCHOOL BUILDINGS.—For some time past Dr. Moreau Morris, of the Health Department, acting under orders from the Sanitary Superintendent, Dr. Cyrus Edson, has been making a careful examination of the public school buildings in the city in order to make an exhaustive report on their sanitary condition, particularly as regards the effectiveness of the system of ventilation in use in each school, and to commend the adoption of such means as in his judgment would adequately ventilate the buildings. In nearly every instance Dr. Morris found a most unsatisfactory condition of affairs, and Dr. Edson has now laid the results of his investigations before the Board of Health, accompanied by a report of his own. In the latter he says: "In other cities and States, more especially in Massachusetts, excellent work has been performed by the authorities in effecting proper ventilation of school

buildings. The outcome of this work has demonstrated that the only adequate means of ventilating school buildings is by fans so arranged and operated as to force into the rooms a supply of fresh air equal per minute to about 30 cubic feet per capita, and by outlet ducts so constructed as to permit egress of partially respired air. . . . In the cases of the buildings upon which the reports of Dr. Morris have been made, it has needed no chemical analysis of the air to demonstrate that the means of ventilation were insufficient. . . . It is unnecessary to describe the unhealthy effects of vitiated air upon the systems of human beings in order to show the necessity for the work in hand. Aside from the well-known direct effects of bad air, slight physical ailments of children, wholly unnoticed, are often developed by the impurities of the air in our school-rooms into serious disease. The only objection that can be made to the recommendations of Dr. Morris is that their compliance will entail the expenditure of a large sum of money. This objection should not weigh for a moment against the health of the school children. Pure air is absolutely essential to their well being. The air of our school buildings should be made pure, regardless of cost.

Miscellany.

THE BACILLUS OF INFLUENZA.

PFEIFFER and Beck¹ have published a report of their further investigations of the bacillus of influenza, an account of which was given in the JOURNAL of February 11th. The pathological appearance found in the lung in cases of typical influenza-pneumonia are characteristic. There is no general hepatization, but foci of bronchopneumonia of different sizes, which occasionally coalesce, and are found mostly in the lower lobes. In the centre of such patches, on section, a yellowish green, purulent secretion may be pressed out from the smaller bronchi. This secretion consists of pus-cells and mucus, and in it can be found the typical bacillus, sometimes free, sometimes inside the cells. They occur often in enormous quantities and generally in pure culture. The bacilli appear to grow in the smaller bronchi and also in the parenchyma of the lung. The authors have failed to find the bacillus in the blood and come to the conclusion that the growth of the specific micro-organism takes place entirely in the bronchi or in the lung. The bacillus is very similar in appearance to several others, and the authors appear to believe that most, if not all of those described by others, have not been true influenza bacillus. The bacilli are aerobic bacteria and are soon destroyed by drying. The authors have not yet found spores, or a condition in which the bacilli may live for any length of time. They are killed by a temperature of 60° C. in five minutes. A description of their appearance and peculiarities of growth are given. The authors have never failed to find this bacteria in cases of influenza, nor found it in persons not suffering from the disease. They have succeeded

¹ Deutsche med. Woeh., May 26th.

in producing a condition in apes similar to human influenza by placing a little of the pure culture upon the mucous membrane of the nose.

EFFECT OF BITTERS ON GASTRIC MOVEMENTS.

TERRAY has published an account of some investigations to determine the effect of various bitters on the movements of the stomach.¹ The experiments were made with dogs. The animal was kept on a restricted diet for two days, and a quarter of an hour before being killed a dose was introduced into the stomach of some bitter which acts on the peripheral automatic centres of the stomach. The most powerful drug was gentian, and after that cetrarin and condurangin; then taraxacum, quinine and lastly quassia. The irritability of the stomach to mechanical stimuli was increased by gentian, taraxacum, quassia, strychnine and columbine. Small doses of absinthium diminished the irritability, and large doses arrested it altogether. Columbine and strychnine increased the irritability until persistent general contractions were induced. Picrotoxin produced no effect on the contractions, while cetrarin not only set up increased movements in the stomach, but produced a similar effect upon the intestinal movements. From a therapeutic point of view, therefore, it appears that in tonic conditions and moderate dilatation bitters may be given with advantage. Cetrarin acts as an aperient in addition to its effect upon the stomach.

THE GROWTH OF MEMORY IN SCHOOL CHILDREN.

MR. THADDEUS L. BOLTON² has tested the growth of memory in school children, using as a basis, tests made upon about 1,500 pupils in the public schools of Worcester. The experiments were made by reading aloud a series of numbers in which the digits were so arranged that they did not stand in their accustomed order and no digit was repeated. At a given signal after the dictation of each number, the pupils wrote the digits as they remembered them, from five to nine digits were given at a time. From the large amount of material thus collected the following conclusions are reached: The limit to the memory-span for the pupils in public schools is six. The memory-span increases with age rather than with the growth of intelligence. Experience in this matter is a better school than books. The memory-span measures the power of concentrated and prolonged attention. Intellectual acuteness, while more often accompanied by a good memory-span and great power of concentrated and prolonged attention, is not necessarily accompanied by them. Girls have better memories than boys. With practice pupils increase in their ability to remember groups of digits. They unconsciously remember digits which they heard the day before. The tests did not show that the pupils suffered fatigue from the day's work, a fact which shows that the work in the schools is probably not excessive. Memory images pass through three stages in leaving the mind, first

they suffer a confusion of order; second, loss of certain elements and the substitution of associated elements; and third, a complete loss of some elements and no recovery. Ideas previously in the mind, association and forms of ideas are factors in causing confusion of the memory image and its final loss. There is an apparent tendency to over-estimate the number of ideas presented to the mind when the number of ideas is slightly greater than the memory-span, but the general rule is to under-estimate the number. Ideas except the last two or three in the series are lasting in an inverse order as they are removed from the beginning of the series in which they occur. The last two or three are lasting, but in a decreasing degree, as they are removed from the end of the series.

THE CURE OF A CASE OF HYDROPHOBIA.

PROFESSOR MURRI, of Bologna, reports a case of a man twenty-two years of age who was bitten by a rabid dog. A few days afterwards he commenced a course of treatment by Pasteur's method which lasted twenty days. He was then seized with undoubted symptoms of hydrophobia of a paralytic form. The lower extremities were completely paralyzed. Two days after the first symptoms intravenous injections of anti-rabic virus were begun. The emulsions used contained medulla of six, five, four and three days. These injections were continued for nine days, one or two being made daily. In commenting upon this case Dr. T. W. Hine³ says, that no method of treatment, known up to the present time, has ever saved a man seized with marked symptoms of hydrophobia. The good result in this case lies in the novel and bold modifications of the method originated by Pasteur. A subcutaneous method is too slow to be of practical use in the presence of a well marked case of rabies.

THERAPEUTIC NOTES.

A NEW KIND OF CIRCUMCISION.—During the discussion of an address by Dr. Joseph Hoffman (on treatment of lesions at and about the head of the colon) before the Alumni Association of the Medical Department of the Niagara University at Buffalo, N. Y., it was suggested by Dr. Wilder, of Ithaca,⁴ that, in view of the dangers to which human beings are exposed from inflammation of the veriform appendix, it be extirpated by aseptic laparotomy soon after the birth of the child.

BETOL⁵ (salinaphthol) is a compound of salicylic acid and naphthol, very similar to salol, and applicable to the same uses. It was expected theoretically that this new compound would be superior in action to salol; but clinical experience has not been generally favorable, although good results are reported from its use so far as an intestinal antiseptic. It comes as small, colorless and odorless broken crystals insoluble in water. Its taste is not disagreeable, and its toxic effects are not noticeable in moderate doses. It is, therefore, a reasonably safe remedy in children's bowel complaints.

¹ Lancet, May 28th.

² New York Medical Record, xxxvii., p. 738, June 28, 1890.

³ Squibb's Ephemera.

BROMOFORM⁸ still continues to give satisfaction in the treatment of whooping-cough, although its use has apparently been confined to only a few observers. Care must be taken to see that it is in normal condition, that of a colorless liquid, for by exposure to the light bromine is set free and colors the liquid. Foreign observers are most pronounced in its favor, and more practitioners in our own country should put investigations on record.

BROMOL⁸ (tribromophenol) is not new, but has been known as the product of the action of bromine in acetone on carbolic acid. As it has been found now to have marked antiseptic properties, this short name has been given it, both for convenience in use and to be in harmony with the already too many new compounds being pushed forth, most of which have names less indicative of their true composition. It has been applied with vaseline to open wounds with success. Its internal uses have been in cases of typhoid fever and cholera infantum. Little has been written yet on its therapeutic uses.

Correspondence.

A BIOGRAPHY OF DR. D. HAYES AGNEW.

UNIVERSITY MEDICAL MAGAZINE, EDITORIAL OFFICES,
PHILADELPHIA, June 17, 1892.

MR. EDITOR:—At the request of Mrs. D. Hayes Agnew, I am preparing a biography of her late distinguished husband; in consequence, I am looking for data on this subject. Will you please state in the columns of the *Boston Medical and Surgical Journal* the fact that I am desirous of obtaining from all of Dr. Agnew's former friends, colleagues, associates, students and acquaintances all such authentic data as relate in any way to his career or character. Dr. Agnew's acquaintance was so vast and his life was so actively spent among his friends, while his own modesty was so marked, that undoubtedly a great many incidents, anecdotes, characteristic stories, etc., are unknown to his family. All material, however insignificant or small will be welcomed, and credit will be given to all data which are used.

Yours faithfully,
J. HOWE ADAMS.

TOXIC RETRO-BULBAR NEURITIS.

SALEM, June 13, 1892.

MR. EDITOR:—The appearance of two new patients, one day last week, both the victims of loss of sight owing to the abuse of alcohol and tobacco, lead me to look over my records, where I found that the ratio of such cases is apparently greater than it was ten years ago.

The late Mr. Crittenden once remarked, somewhat tersely, at Moorfields, "Rum, shag, and W——(women) are frequently the causes of serious eye-troubles."

Three cases are recalled within a few years where the vision was affected in tobacco-chewers. On abstaining, the sight in two was greatly improved. All were teetotalers, so far as the use of spirits was concerned. The smoking alone of cigars and pipes has not infrequently been the apparent cause of amblyopia. No cases of this eye-trouble, owing to the smoking of cigarettes, have yet come under my observation. It is somewhat remarkable that no females having this affection have yet been seen, when we consider how largely snuff is used, ostensibly as a dentifrice, by mill operatives in our factory towns—a more elegant procedure, perhaps, than the dipping that prevails in our Southern States.

And strong beer, at least, is partaken of somewhat freely

⁸ Squibb's Ephemeris.

by such females, but no case of the old *amblyopia exabusa* has yet been seen by the writer in the gentler sex.

Most patients who suffer from this form of neuritis are both smokers and drinkers. Ordinarily they live in cities or large towns—or such has been my experience—yet some of my tobacco cases lived far from the madding crowd, as did two old smokers in a Florida village.

Soldiers of the late war appear each year, with fishermen, an occasional master-mariner, saloon-keepers more frequently, and sometimes men of our calling and (tell it not in Gath), more rarely, a disciple of a calling akin to ours who has followed too literally the advice of Timothy as to the use of a little wine.

This disease is more common in this country and in Great Britain, where the tobacco is strong, than it is in Germany and Turkey. Then, too, in the latter countries spirits are less consumed.

An excellent London ophthalmic surgeon in his first treatise on the eye, in 1875, expressed some doubt as to the action of these agents on the sight, but in a later volume (1887), he evidently ascribes to them this form of toxic neuritis.

Patients having this trouble are apt to be unsatisfactory ones to treat.

They ordinarily promise to abstain with gratifying alacrity but they by no means invariably carry out their good intentions. They take potassium iodide or strichnina with "acid phosphate," and at night, perhaps, a bromide draught. The subsequent gain in vision is sometimes found to have been considerable (in the rare instances when the patient consents to return) while if he does not reform his habits the reverse is pretty sure to follow.

Yours truly, DAVID COGGIN, M.D.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, JUNE 11, 1892.

Cities.	Estimated population for 1890.	Reported deaths in week.		Deaths under five years.	Infectious diseases.	Acute lung disease.	Diarrhoeal disease.	Diphtheria and croup.	Measles.
		Reported deaths in sec'd.	Deaths under five years.						
New York	1,515,361	767	344	21.45	18.46	4.36	4.05	7.02	
Chicago	1,396,850	—	—	—	—	—	—	—	
Philadelphia	1,046,964	375	137	17.35	9.72	5.94	3.94	.81	
Brooklyn	882,000	297	109	15.64	17.34	4.98	5.40	3.40	
Baltimore	521,270	151	70	10.70	—	—	—	—	
Boston	448,477	169	47	13.57	17.11	2.36	3.54	—	
Baltimore	434,439	—	—	—	—	—	—	—	
Cincinnati	226,964	103	38	7.68	8.61	.96	1.92	—	
Cleveland	202,960	85	34	26.40	13.20	2.40	6.00	3.60	
Albion	149,060	—	—	—	—	—	—	—	
Milwaukee	210,090	67	27	8.58	10.36	1.48	2.36	1.48	
Washington	230,392	105	46	13.30	9.50	3.80	3.95	—	
Nashville	76,164	16	15	30.58	5.56	18.46	2.78	—	
Charleston	65,165	43	17	23.30	4.66	18.84	—	5.33	
Portland	39,165	10	5	10.00	—	—	—	—	
Worcester	41,635	28	13	16.71	7.14	3.57	3.57	—	
Lowell	77,686	33	17	21.21	3.03	15.15	—	—	
Fall River	44,386	16	6	6.25	—	—	—	6.25	
Lynn	55,727	16	2	—	6.25	—	—	—	
Lawrence	44,219	19	10	21.04	5.21	10.52	—	—	
St. Paul	44,119	10	5	10.00	—	—	—	5.26	
New Bedford	40,738	10	5	1.00	3.00	—	—	—	
Holyoke	35,637	11	7	45.45	—	18.18	—	9.09	
Salem	30,861	8	2	—	25.00	—	—	—	
Haverhill	27,412	8	3	25.00	—	—	—	—	
Concord	27,412	6	3	—	—	—	—	—	
Paanton	25,445	7	1	—	14.28	—	—	—	
Newton	24,316	2	1	—	—	—	—	—	
Malden	23,031	8	1	25.00	12.50	—	12.50	—	
Northampton	14,560	4	1	—	—	—	—	—	
Newburyport	13,947	6	1	—	—	—	—	—	
Brockton	12,103	4	0	—	—	—	—	—	
Uxbridge	11,943	4	0	—	—	—	—	—	
Everett	11,968	6	0	—	—	—	—	—	
Hyde Park	10,193	4	0	—	—	—	—	—	
Peabody	10,158	—	—	—	—	—	—	—	

Deaths reported 2,291; under five years of age 801; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhoeal diseases, whooping-cough, erysipelas and fevers) 406; acute lung diseases 310; consumption 284; diarrhoeal diseases 104; diphtheria and croup 62; measles 75; scarlet fever 48; typhoid fever 29; whooping-cough 20; cerebro-spinal meningitis 17; erysipelas 11; malarial fever 9; small-pox 1.

From scarlet fever New York 21, Philadelphia 10, Brooklyn 7, Boston 6, Cincinnati, Lowell, Lawrence and Pittsfield 1 each. From typhoid fever New York 7, Cleveland 5, Philadelphia 4, Cincinnati 3, Washington 2, Milwaukee, Lowell, Holyoke, Haverhill and Everett 1 each. From whooping-cough New York 4, Philadelphia 3, Brooklyn, Boston and Washington 2 each, Cincinnati, Milwaukee, Nashville, Charleston, Worcester and Lawrence 1 each. From cerebro-spinal meningitis New York 6, Washington 4, Brooklyn 2, Nashville, Haverhill, Malden, Quincy and Everett 1 each. From erysipelas New York 4, Boston and Cleveland 2 each, Washington and Springfield 1 each. From malarial fever Brooklyn 3, New York 2, Philadelphia, New Bedford and Charleston 1 each. From small-pox New Bedford 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending June 4th, the death-rate was 17.9. Deaths reported 3,006: acute diseases of the respiratory organs (London) 240, measles 189, whooping-cough 106, diarrhoea 51, diphtheria 27, scarlet fever 32, fever 26, small-pox (London) 3.

The death-rates ranged from 10.8 in Portsmouth to 25.9 in Burnley; Birmingham 20.0, Bradford 14.7, Hull 16.0, Leeds 18.9, Leicester 20.6, Liverpool 21.9, London 17.4, Manchester 24.2, Newcastle-on-Tyne 15.7, Nottingham 18.4, Plymouth 12.8, Sheffield 18.4, Sunderland 19.2, Wolverhampton 18.1.

METEOROLOGICAL RECORD.

For the week ending June 11, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Date.	Baro-meter	Thermometer.	Relative humidity.	Direction of wind.	Velocity of wind.	Weath'r.	Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	8 A.M.	8 P.M.	8 A.M.	
S. 5	36.23	65	55	58	85	72	S. S. 13 12 O. O.
M. 6	35.88	74	64	82	65	76	W. W. 10 10 F. F.
T. 7	36.15	65	70	60	53	54	N.E. S. 18 10 C. C.
W. 8	36.18	66	66	58	38	64	S.W. S. 9 12 F. O. O.
T. 9	36.00	65	62	53	42	94	N.E. E. 5 3 O. O.
F. 10	36.00	55	49	52	42	94	N.E. E. 5 3 O. O.
S. 11	36.00	65	81	49	58	63	S. S.W. 9 15 F. C. .33
MEAN						12 9	.044

* O. cloudy; C. clear; F. fair; G. fog; H. hazy; S. smoky; R. rain; T. threatening; N. snow. * Indicates trace of rainfall. MEAN Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 11, 1892, TO JUNE 17, 1892.

The leave of absence granted CAPTAIN WILLIAM C. GORGAS, assistant surgeon, U. S. A., is extended one month.

The leave of absence for seven days granted CAPTAIN HENRY S. T. HARRIS, assistant surgeon, U. S. A., is extended twenty-three days.

FIRST-LIEUT. MERRITTE W. IRELAND, assistant surgeon, is relieved from temporary duty at Fort Yates, N. D., and will rejoin his proper station, Fort Riley, Kansas.

FIRST-LIEUT. HENRY C. FISHER, assistant surgeon, is relieved from duty at Fort Riley, Kansas, and will report in person to the commanding officer, Fort Yates, N. D., for duty at that station.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 18, 1892.

W. F. ARNOLD, passed assistant surgeon, detached from U. S. Training-ship "Richmond" and placed on waiting orders.

M. W. BARNUM, assistant surgeon, detached from Naval Hospital, Washington, D. C., and to the U. S. Training-ship "Richmond."

H. T. PERCY, passed assistant surgeon, ordered to the Naval Hospital, Washington, D. C.

GEORGE M. C. PICKRELL, passed assistant surgeon, detached from Naval Hospital, Norfolk, Va., and to the U. S. S. "Newark."

HARVARD MEDICAL SCHOOL ASSOCIATION.

The annual meeting of the Harvard Medical School Association will be held in Boston, at the Medical School Building on Boylston Street, at 12 o'clock on Tuesday, June 28, 1892.

The second annual dinner will be given at Hotel Vendome, Boston, at one o'clock of the same day (Tuesday, June 28th). Among the speakers at the dinner will be President Elliot, Dr. Wm. Pepper, Provost of the University of Pennsylvania, Dr. Wm. H. Welch, Professor of Pathology at Johns Hopkins University, and Dr. James C. White, President of the Massachusetts Medical Society.

Dinner tickets will be two dollars each, and can be obtained by members either at the Medical School or at Hotel Vendome between the hours of 11 and 1 on the day of the dinner.

ROBERT W. LOVETT, Secretary.

CORRECTION.

In our report of the meeting of the Massachusetts Medical Society on page 512, a few mistakes in the Treasurer's report will be found corrected on page 640.

RECENT DEATHS.

CLARENCE WHITFIELD PRYTON, M.D., M.M.S.S., died in Dedham, Mass., June 14, 1892, aged twenty-six years.

ERZA BARTLETT, M.D. (Dart. 1832), died in Brooklyn, N. Y., June 16th, aged eighty-one. He had practised in different cities in New England, and during the war served as surgeon in the United States Army.

HENRY F. FORMAD, M.D., Demonstrator of Pathology and Lecturer on Morbid Anatomy at the University of Pennsylvania and Pathologist to the Philadelphia Hospital, died June 5th, at the age of forty-five years.

DAVID N. SKINNER, M.D. (Bowd. 1867), died in Auburn, Me., June 18th, aged fifty years. He was the author of several papers on diseases of the eye.

BOOKS AND PAMPHLETS RECEIVED.

Proceedings of the New York Pathological Society for the Year 1891.

The Wills Eye Hospital, Report for the years 1891 and 1892. Philadelphia. 1892.

Synopsis of the Lives of Victoria C. Woodhull and Tennessee Claflin. By G. L. Darwin.

Record Book for Trained Nurses. Published by Frank M. Bertram, New Bedford, Mass.

Twenty-fourth Annual Report of the Inebriates' Home, Fort Harrison, N. Y., for the year 1891.

Tenth Annual Report of the State Board of Health of the State of New Hampshire for the year ending October 31, 1891.

Twenty-eighth Report of the Trustees of the Boston City Hospital, for thirteen months, from January 1, 1891, to January 31, 1892.

Contractions of the Finger and on Hammer Toe. By William Adams, F.R.C.S. Second edition. London: J. & A. Churchill. 1892.

Elements of Materia Medica and Therapeutics. By C. E. Armand Semple, M.B., M.R.C.P. London: Longmans, Green & Co. 1892.

Atlas of Clinical Medicine. By Byron Bramwell, M.D., F.R.C.P., F.R.S. Vol. I, part iv. Edinburgh: T. & A. Constable. 1892.

Spectacles and Eye Glasses; Their Forms, Mounting and Proper Adjustment. By R. J. Phillips, M.D. Philadelphia: P. Blakiston, Son & Co. 1892.

The Diagnosis of Diseases of the Nervous System. A Manual for Students and Practitioners. By Christian A. Hertig, M.D. New York: G. P. Putnam's Sons. 1892.

The History of Higher Education in Ohio. By George W. Knight, Ph.D., and John R. Commons, A.M. Washington: Bureau of Education, Circular of Information, No. 5. 1891.

Biological Teaching in the Colleges of the United States. By John P. Campbell, Ph.D., Professor of Biology in the University of Georgia. Washington: Bureau of Education, Circular of Information, No. 9. 1891.

Station-List of Officers of the Medical Department and Hospital Stewards of the Hospital Corps, United States Army, May 1, 1892, or at date of last report received at this office. Washington: Government Printing Office. 1892.

Selection of Interesting Eye Cases. Rapid Dilatation and Curing. Jequirity in the Treatment of Granular Lids. Lessons Taught by a Post-mortem, or the Past and Might Have Been. By J. G. Carpenter, M.D., Stanford, Ky. Reprints. 1892.

Address.**ADDRESS AT THE ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION.¹**BY S. W. LANOMAID, M.D., *President.*

It is my honorable and pleasing duty to announce the opening of the Fourteenth Annual Congress of our Society. Estimating the value of the Association as I do, I can conceive of no greater honor than to be its presiding officer. The enjoyment which I always have in our annual meetings is enhanced by the evident desire which was shown that we should meet in Boston and because you are our guests.

The present membership of the Association consists of forty-five active, one honorary, and ten corresponding Fellows. The council recommends the enlargement of the Society by the reinstatement of a former member, and by the election of eight active Fellows. It will recommend for corresponding fellowship three well-known European laryngologists.

During the past year the Association has lost by death one active Fellow. Dr. Frank Donaldson, of Baltimore, emeritus clinical professor of diseases of the throat and chest in the University of Maryland, died December 8, 1891. The loss to our Association by the death of Dr. Donaldson is real. We have lost his genial companionship, his sympathy, his manly sweetness of character, his active interest in the Society, and his fair-minded judgment. We have lost a learned friend and most valuable member, and the Association mourns to-day and will continue to regret his untimely death.

Another loss to the Society and to the world is already in your minds before I can utter it. The death of Sir Morell Mackenzie removed not only the personal friend of many of us but an interested friend and member of our Association. Any words of mine would be sadly incompetent to convey an idea of what the loss to laryngology is by Mackenzie's death. Fortunately, the most sympathetic and comprehensive utterances have already been made by his associates and friends all over the world, and although we cannot add to them we can make these utterances our own through our sincere endorsement of their truth.

A remarkable man has departed, a teacher and arbitrator in all laryngological matters, and in our grief at our loss we selfishly murmur that we cannot longer avail ourselves of his skill, his knowledge and his judgment. The office of the teacher has no superior, and in that office Mackenzie was pre-eminent.

The programme of the present meeting consists in the reading and discussion of no less than eighteen papers. The subject of each paper is of vital interest, and the time for discussion will be far too short for our satisfaction and instruction. Under these circumstances the preliminary address, which is expected at the opening of the Congress, must necessarily be short.

I cannot refrain, however, from giving utterance to a few thoughts which have presented themselves in anticipation of this occasion. When I think of the present status of this Association; of what it is, and what it has done; when I consider the wealth of laryngological knowledge of which the world is possessed, to which this Association has been a not small contributor, I cannot forget the small beginning, the tiny

rivulet from which this quiet stream of knowledge had its rise, and that some of us began our voyage of professional life almost at its source. I hold in my hand the rare but interesting works of Beunati.² So rare, that our lamented Elsberg, whose bibliographical knowledge was second to none, had never seen them until a few years before his decease.

To me they are intensely interesting because of the original investigation which they record, and because they are the last worthy publications of the old dispensation — the dispensation of darkness and guess — worse before the new dispensation of light and certainty were ushered in by the discovery of the laryngoscope. No special student was ever more in earnest, and no one has given a better account of what could be seen in the singer's throat than Beunati. The reader cannot help a sigh of pity that the means by which that wonderful mechanism, the living larynx, can be seen, had not then been discovered. Beunati's investigations were of necessity confined to parts which were then visible, namely, those which constitute the buccal pharynx. All below and all above were *terra incognita*. Throughout Beunati's works one can read between the lines his burning desire to be able to see the living glottis.

When I began the study of throat disease as determined by the laryngoscope, almost the only works upon the subject were the well-known paper of Czermak, a small treatise by Elsberg, and the volume by Sir Duucan Gibb. The original paper of Garcia was inaccessible. Since then, as we know to our cost, the literature of laryngology has increased by standard publications and ephemeral magazine articles until no one without assistance can hope to keep quite abreast of discoveries and clinical observations. Such industry in observation and study, and such rapid discoveries evince the greatest activity in the laryngological specialty. To this multitudinous literature this Association has contributed largely and valuably.

In the address of welcome which I had the pleasure of making ten years ago on the occasion of the former meeting under the presidency of Dr. Knight, I said in effect that I believed the coming years would show as good work from the members of this Association as had already been done by them. My belief was not unfounded. During the last ten years I find in our archives, among others, most valuable papers and discussions upon the following subjects: Upon the respiratory function of the human larynx, upon the special senses of smell and taste, tension of the vocal bands, the nervous origin of diseases, the physiology of the voice, the paralysis of the larynx, morbid growths in nose and throat, new operations for deformities, descriptions of many new instruments, new remedies, climatology in connection with laryngeal phthisis, photography of the larynx, correction of the faults of the voice, investigations with regard to brain centres, etc. These papers are the result of *original* thought, invention and discovery, and we have reason to be proud of them.

Ten years ago I said that in no special branch of medicine were such advances being made as in our own. I am pleased to say that within these ten years there has been an advance all along the line of medicine and surgery, perhaps more marked in the special departments of brain and abdominal surgery. The

¹ Boston, June 20, 1892.² Recherches sur le mécanisme de la voix humaine. Recherches sur les maladies de la voix humaine. Par F. Beunati. Paris, 1832.

methods used and the results obtained are largely due to the discoveries which have been made in the biological laboratories. Let us hope that the future will not find us behind in the rapid march of improvement and discovery.

I believe that our advance will be greatly helped by faithful adherence to this Association. A man's education does not consist entirely of what he can acquire by his own effort. Companionship with fellow-workers is necessary to complete his growth. The kindly but severe criticism of those who are engaged in similar pursuits, and who are, therefore, best fitted to estimate the value of any theory or invention is of incalculable use. Membership is not only a means of information, but it is a stimulus to work and production as well.

Let us hope that the next ten years will show such a record of work performed, of knowledge gained, that the American Laryngological will not occupy any other position than that which has always been accorded it, namely, the first in merit as well as in priority of establishment.

Original Articles.

THE VERTIGO OF ARTERIO-SCлерOSIS.¹

BY ARCHIBALD CHURCH, M.D.,

Professor of Neurology, Chicago Polyclinic; Lecturer on Insanity, Chicago Medical College.

The discussion of a pathologically subjective state is in itself practically impossible, and the difficulty is not lessened when that state is a symptom of many widely differing conditions, some functional and some grossly organic. To use the term vertigo is therefore undesirable, but for lack of one more definite its employment a necessity, and in this connection is not open, perhaps, to the emphatic objection that elsewhere obtains. It is in its generic sense that I wish to make use of it.

In a very recent and comprehensive article Suckling² takes up the subject of vertigo and in a way describes it as the consciousness of disordered equilibration, showing that it may exist from want of harmony in the impressions received from any of the senses, and possibly from the sensibility of the viscera as well, but it is not the present purpose to direct attention to the physiology of equilibration nor to take up the interesting topic of co-ordination, which is closely associated therewith. He clinically classifies the forms of vertigo as aural, ocular, vascular, dyspeptic, nervous, epileptic, toxic, of organic brain disease, and from reflex irritation, but says specifically nothing of the vertigo of arterio-sclerosis. Most other writers either on the topic of vertigo or that of arterio-sclerosis are equally silent; yet vertigo may be and often is, as will be urged farther on, a signal symptom of this arterial state, the proper recognition of which may lead to such treatment as will obviate organic diseases of the brain, kidneys, liver, and other important structures, and many times definitively prolong life.

It is only of late years that arterial changes have been given the importance in pathology and in clinical medicine that they deserve. The degeneration of senility, the modifications found in gout, rheumatism,

chronic metallic poisoning, syphilis, and which are associated with alcoholism, Bright's disease, and many other serious maladies, makes it imperative that we recognize at the earliest moment the presence of a change in the artery which may in many instances be amenable, in the early stage, to treatment but which soon otherwise passes beyond the possibility of medical control. Atheroma is not here synonymous by any means. It is the pre-atheromatous condition with which we have to deal, and it is the vertigo symptomatic of that arterial fibrosis to which your attention is directed. As a matter of demonstrable fact this arterial state is widely and generally disseminated in these cases, but the complexion of the disease varies with its local intensity. In some instances a contracted kidney, in others angina pectoris, in others the cerebral symptoms are the prominent features, and of the brain symptoms the earliest is vertigo, and the last cerebræ hemorrhage or dementia.

When a man past the prime of life, without any previous serious illness, becomes suddenly faint, has a swimming in the head, a feeling of giddiness, of distinct gyration, of darkness and impending death, one or several of these sensations, he usually at once seeks advice in grave apprehension, sometimes well founded, of approaching cerebral apoplexy, and usually gets a chalagogue cathartic, or is told that his stomach is wrong, and sometimes is told rightly. But cases are constantly presenting themselves in which such vertiginous attacks are happening at shortening intervals, the patient gives up his tobacco, his spirits, if he is a drinker, cuts down his meat, takes to some of the many waters recommended, has Turkish baths, and gains only moderate relief—or none at all. If he is carefully examined he will probably present a well defined tortuous frontal artery, a distinct arcus senilis, a strong, even a clanging, second sound of the heart, sometimes reduplicated, and give a sphygmogram indicative of increased arterial tension. The pulse may be abnormally slow or arrhythmic, the urine scant and a trace of albumen is not rare. He finds that exertion of a moderate amount precipitates the attack, that he cannot endure a temperature at all above the usual, and often a change of position from recumbency to the upright is the occasion of a "blurr" or of giddiness.

The attack itself is, as already indicated, widely variable in different patients, but usually consists with itself for the given individual. A fullness and throbbing in the head, a feeling of heat in the scalp, and a blur before the eyes are usually mentioned, and at such times marked paleness is noticed, followed, as a rule, by considerable redness of the face. There is a tendency to get into the open air, and badly-ventilated or close apartments are unendurable. An habitual smoker will sometimes find tobacco smoke repugnant. In more severe forms the patient may stagger, fall, or gradually sink to the ground; he cannot speak for a few seconds though consciousness is rarely completely lost. The recumbent position is usually sought, or the patient clings to some object, and after a period of from five to twenty minutes the feeling passes away leaving him rather languid, with an inclination to sleep, and usually mentally depressed and apprehensive. At first he attributes the attack to anything and everything that in his estimation can cause a departure from health, and usually establishes a close watch upon his diet, habits and mode of life, is inclined to avoid exercise or exertion of any sort, fearing to precipitate an

¹ Read before the American Medical Association, June 8, 1892.

² Birmingham Med. Rev., Nov. 1891.

attack, or to go by himself on the streets, and in short becomes an invalid with hypochondriacal tendencies.

In a remarkable monograph on this subject Professor J. Grasset,⁴ of Montpellier, divides the vertigos of arterio-sclerosis into three forms: (1) Simple vertigo, (2) Vertigo with epileptiform crises, and (3) Vertigo with slow pulse and syncopic, or epileptiform attacks. Some of the features of the slighter attacks, as already roughly sketched, undoubtedly suggest a similarity to mild epileptic seizures, for instance, the paleness of the face, the oppression and the final confusion, depression and tendency to sleep, but personally I have never encountered well marked convulsive phenomena reasonably attributable to this cause.

With Huchard,⁵ this writer is inclined in some cases to attribute acquired habitual extreme slowness of the pulse, which in numerous reported instances has ranged from twenty to forty per minute, or even less, to the effect upon the medulla of an arterio-sclerosis acting mechanically to lessen the blood-supply to the cardiac centres. As yet this hypothesis has received, as far as I have been able to ascertain, no positive anatomical or experimental support, though it is seductively reasonable. This bradycardia is almost always marked by syncopal and vertiginous features and arises in individuals predisposed to or actually the subjects of marked arterio-fibrosis.

The diagnosis is often one of extreme difficulty, in spite of a hasty contrary statement by a recent American writer, and I have known this symptomatic vertigo confused with Meniere's disease by a very competent specialist in nervous diseases, for it may, as in that particular instance, be of a systematized character, that is to say, marked by a sensation of falling in a given direction, or of being rotated in a constant manner to the right or left, and even associated with a suggestive stagger. If to this a little middle ear catarrh is added, a diagnosis of aural vertigo might be easily reached, but a closer and somewhat wider examination will detect the integrity of the auditory nerve and the presence of the arterial fibrosis with the underlying predisposition of alcoholic excess, syphilis, gout, rheumatism, chronic lead infection, or other constitutional state of etiological significance.

In the treatment the basic element is the object of attack, and whatever this may be, the iodide of potash will find an indication in the arterial change, which if recognized in its incipiency can be practically controlled, providing the patient is manageable. It is the sheet anchor, and given in moderate doses of from thirty to ninety grains a day for a number of months, much benefit and often a substantial cure can be expected.

I am lead to emphasize the importance of this vertigo because it is a very early symptom of a condition which neglected leads to distressing and even fatal results, and which unrecognized is the source of endless anxiety and misery to the patient and of chagrin and disappointment to his medical attendant. If it were desirable numerous case records could be cited, but it is hoped that attention once having been called to a proper interpretation of the symptom it may be less frequently mistaken, and I would urge that the condition of the arteries and the heart be made an object of early and thorough investigation in every instance where obscure vertiginous attacks, or a persistent giddiness is present.

⁴ Du Vertige Cardio-Vasculaire, Paris, 1890.

⁵ Traité des Maladies du cœur et des vaisseaux.

MALARIAL EPILEPSY.¹

BY EUGENE W. HILL, M.D., WEST BOSTON, MASS.

TWENTY-ONE years ago Echeverria, in the preface of his work, stated "It does not claim to offer any new discovery . . . still less is it designed to be an English treatise on epilepsy." I have attempted to meet a deficiency in my own knowledge by comparing the cases I have carefully noted. How far these notes may meet the wants of others remains to be seen. The foregoing expresses the object of this paper.

I have selected from my notes two cases of malarial epilepsy, with some observations as to the prognosis of epilepsy in general as modified by treatment, which I submit for your approval.

CASE I. M. F., a boy, eighteen years of age. Parents dead; father from alcoholism, mother from phthisis. Patient was never mentally at par, and for a year after birth had periods of dulness lasting several days during which he was morose and sleepy. At school, he was not apt, and was withdrawn early; being of slender physique and in indigent circumstances, he remained at home without education, employment or medical assistance. Under this routine, he gradually became morbid and melancholic. Two years ago he was attacked by the tertian form of intermittent fever, responding readily to treatment. Hygienic measures and anti-malarial treatment were instituted for two or three months. Under this stimulus he improved mentally and physically, and for a year suffered from no ailment of any kind until he was seized by malarial fever of the same form, beginning with a twenty-five-minute chill; the second day he remained in bed, with normal temperature but irregular pulse; at time of expected chill on the following day a convolution occurred, followed by others. Medical assistance for this seizure was not until then summoned. I found him unconscious, convulsions occurring every five or six minutes, beginning locally by twitchings in the right hand extending up the muscles of the arm, followed by rotation of the eyes and head over the left shoulder, with a general epileptic paroxysm. The face during the quiet interval was flushed and hot, but became livid during the spasm. The temperature was difficult to follow from the rapidity of the convulsions, but rose to about 104° in the interval, and from 104.5° to 105° during latter part of the paroxysm; the usual depression seen before a normal epileptic explosion I was unable to obtain; the pulse was irregular, weak, bounding from 80 to 140 and over. Gradually perspiration appeared on the forehead and upper extremities of a cadaveric odor, the temperature fell gradually to 100° between, and 101° during the paroxysm, the urine was passed involuntarily, nearly colorless in character. The epileptic status still continued showing no change or diminution of vigor with falling temperature and profuse perspiration as compared with the previous condition of high temperature, flushed face and dry skin. For five hours they averaged four to eight per hour. Chloroform and nitrate of amyl controlled them slightly, but one-fiftieth of a grain of nitro-glycerine (two drops, one per cent.), dropped on the tongue every twenty minutes caused a gradual cessation in course of an hour, during which bromides were administered with quinine hypodermatically. Nevertheless, the paroxysms again returned and continued until death in the morning.

¹ Read before the Norfolk District Medical Society, January 29, 1892.

CASE II. F. K., a boy, aged nine, strong and hardy. Parents living; no hereditary history of any disease; three sisters all in good health. In April, 1890, he suffered from intermittent fever, beginning with a chill at 4 A. M. Forty-eight hours later had an attack commencing at midnight, ceasing at 7 A. M., about twelve paroxysms, but did not bite his tongue.

In May, 1891, one year later, suffered from malarial intermittent fever as before. On third day, at time of expectant chill, was seized with convulsions to the number of fifteen. Bromide amyl pearls and chloroform failed to give results which followed use of nitro-glycerine as in previous case. The paroxysms recurred in spite of treatment every other day for ten days, but diminishing in number and severity. The temperature gave the same rise and fall as in Case I, but never ascended above 103°. The scalp remained very tender for several days. The patient was still subject during the autumn, about once a month, to nocturnal attacks preceding twenty-four to thirty-six hours by malaise, nausea and vomiting. The attacks are readily aborted by quinine, bromides and calomel.

These cases are the result of malarial fever in New England; during the years 1880 and 1884 forms of malarial fever appeared in Massachusetts of sufficient frequency to claim the attention of the State Board of Health. In the latter part of 1885 and beginning of 1886, they were epidemic in character at South Framingham, disappearing from its previous localities, spreading along the course of a small stream (Beaver-dam Brook) to Natick. Since 1886, it has disappeared entirely from South Framingham, and became prevalent along the Charles River through South Natick, Wellesley, Dover, Watertown, and the Newtons. In South Natick and Dover, the location of the cases reported, malarial fever prevails with greater severity than in any portion of the valley, scarcely any resident escaping during the summer and fall seasons.

Malarial epilepsy has been recognized from early times of medicine. Hippocrates clearly refers to epileptic fevers (*febro comitales*) and their greater frequency during the spring and autumn months (*Echeverria*). According to modern authors, it is rare. The literature examined shows reports only by

Lowe and Paine: Indian Annals of Medical Science, Calcutta, 1860-61, vol. vii, p. 267, et seq.

Hansfield Jones: Clinical Observations of Functional Nervous Disorders, 1868, p. 139.

Echeverria: Epilepsy, 1870. Two cases.

Mackay: Edinburgh, Eng. One case in detail.

Jacobi: Hospital Gazette, New York, 1879, pp. 41-43. One case.

Hamilton: Pepper's System, vol. v, p. 472. Three cases.

Hammond: Nervous Diseases, 1891, 7th edition. Seven cases as a cause (?).

Ferreira: Archivo Italiano di Pediat., 1889.

Ferreira finds four varieties of cerebral form of malaria seen in children during the heated season: (1) the eclamptic, (2) the comatose, (3) the delirious, (4) meningitic. The last two were observed in older children.

Meigs,² Pepper² and Lewis Smith⁴ hold that it is not unusual for malarial fever to be ushered in by a convolution taking the place of a chill; and in 1882 the *North Carolina Medical Journal* stated, editorially, "there is no more fatal disease in children in the malarial districts of the South than malarial eclampsia."

Dr. Smith, however, says he is surprised at the immunity of epileptics from infantile convulsions.

Dr. Morris J. Lewis,⁴ with ten years' experience at the Dispensary of the Children's Hospital, Philadelphia, has failed at that parallel to note such fatal results from malarial poison as seen in North Carolina; and in New England, malarial fever, I believe, does not show any such convulsive substitution.

It is interesting to note — already mentioned — that the convulsions continued unchanged with unrelenting energy under three entirely different conditions, namely, the three stages of an intermittent fever; (2) the temperature rose with the close of each paroxysm, but fell in the quiet interval to the fever level, and did not show the abrupt, rapid and successive rise which occurs in eclampsia;⁵ (3) the success of nitro-glycerine, as an epileptic status, over bromides, chloroform and nitrate of amyl, especially in those cases characterized with a large flow of pale urine, and which is in accord with the observations of others.

Clinical Department.

A CASE OF INFLUENZA WITH ERUPTION.¹

BY CAPT. S. G. ROBINSON,

Medical Department United States Army, Fort du Chesne, Utah.

LOUIS SCHEAR, white, age nineteen, laborer, was admitted to the post hospital at Fort Du Chesne, Utah, on March 28th, with the following history: With the exception of measles fifteen years ago, and typhoid fever one year ago, has always been strong and well. Has worked in the Park City mines, but has never had any symptoms indicating lead poisoning. Was taken sick seven days before admission with headache, severe pains in the calves of the legs, slight chilly sensations, fever, slight cough, marked muscular weakness and loss of appetite, two days after which an eruption appeared which even when first noticed was universal. Has taken no medicine.

When admitted, he had a temperature of 101.5° (which rose that afternoon to 103°), a pulse of 120, a slight cough, no corza or conjunctivitis. Over the whole body, but most abundant on the legs, where it was deeper in shade, was an eruption of reddish spots from one-half to two millimetres in diameter, irregularly circular, coalescing in a few instances, elevated just enough to be perceptible to the touch, not exclusively associated with hair follicles, without special arrangement, not itching, and which fourteen days after its appearance—gradually faded without desquamation. On the hard and soft palate, were similar spots, with such modifications in appearance as might be expected from their seat. It was also visible on the palms of the hands. Epitrochlear and inguinal glands to be felt. On the knuckle of the right ring-finger was a slight abrasion surrounded by a parchment-like induration. This came, the patient said, from a burn received the day before he was taken ill. It disappeared without treatment. No oedema of legs or swelling of joints. Some sub-sternal soreness on coughing, but no tenderness on percussion. Tongue coated, bowels constipated, urine scanty and depositing urates, but otherwise

¹ Published by authority of the Surgeon-General.

² Keating: Diseases of Children, vol. iv, page 876.

³ Bourneville: Archives de Tocologia, tome ii.

² Local citations.

⁴ Diseases of Children, vol. iv, page 285.

normal. Auscultation of heart and lungs gave negative results. The temperature, which gradually declined, was usually one-half to one degree higher in the morning, and became normal on the eighth day after admission. He complained once of a sore throat, which was speedily relieved by a chlorate of potash gargle. No trace of sores or induration on penis or in rectum. He was discharged from hospital April 7th, complaining only of a weakness that was rapidly passing away.

The treatment was limited to rest in bed, regulation of the diet and the administration of a few doses of quinine, Dover's powder and phenacetin.

The interest in this case centres on the diagnosis. Without the eruption and during the prevalence of influenza, one would not hesitate to give the disorder that name. Cases of influenza accompanied by an eruption have recently been reported. Was this one?

A CASE OF RECURRENT APPENDICITIS; OPERATION; RECOVERY.

BY JOHN C. MUNRO, M.D.

The following is reported as a contribution to those cases of removal of the appendix for recurrent, severe attacks of pain, in which the pathological lesions are not commensurate with the suffering endured.

N. M., seventeen years old, servant, rather fat and undersized, with a marked phthisical family history, and of a nervous temperament, came to me first in November, 1889. In the previous year she had had a short attack of colic, but none since, until a few weeks before I saw her when she had had several attacks of cramps in the bowels, coming on generally at night, and, so far as could be determined, without any reference to the catamenia, diet, etc.

There were no evidences of heart, lung, renal or hepatic trouble; the menses were normal, and the bowels, though constipated, were regular. Improvement followed the administration of iron and laxatives.

In the latter part of December, however, without any warning, she had a severe colic lasting eight hours, and not relieved by hot applications or mild opiates. She could lie partly on the right side and located the pain in the cecal region. The next morning, feeling better, she worked; but in the afternoon the pain returned, and she came to my office, when I found marked tenderness over the cecal region, but a normal pulse and temperature. She complained that the jolting of the horse-car caused pain in the same locality.

That night she had a severe attack; Dr. Vaughan, of Cambridge, was called in, and found her suffering acutely, with a weak, rapid pulse, but normal temperature. Pain was controlled only by large doses of morphia. The following morning I saw her with Dr. Vaughan, and he kindly admitted her to his wards in the Cambridge Hospital, where she remained about two weeks and made an uninterrupted recovery under rest, diet and opium.

For a few weeks she did well; but a mild attack coming on, she went at my advice to St. Luke's Home. No gain was made, so she was admitted to the gynecological ward at the Carney Hospital, and carefully examined for pelvic trouble, with negative result, a diagnosis of inflammation of the appendix being made. While there she had some slight attacks, but being

anxious to work, she returned to her former place in Cambridge. Shortly afterwards, while reaching upwards, she felt a sharp stinging pain in the abdomen; and this was followed, in a few hours, by one of the old attacks, and then for the next two months by repeated sharp, short attacks, together with a constant dull aching and tenderness over the cecum, always made worse by fatigue or jolting.

In the summer of 1890 I proposed excision to her, or absolute rest for four months. She chose the latter and went into the country; but, even with the most careful diet and rest, she had one acute attack that kept her in bed for a week.

I did not see her again until January, 1891, when she reported that she had been trying to do light work, but that the cramps were induced at the slightest provocation. She looked badly: was thin, discouraged, and showed in her face that she had suffered a great deal. She asked that some operation be done; and a few days later Dr. R. W. Lovett kindly saw her in consultation. No satisfactory examination could be made on account of the extreme sensitiveness over the lower right abdomen.

On February 20th, at St. Margaret's Infirmary, with the kind assistance of Drs. Mixer, Lovett and Paul Thorndike the abdomen was opened in the right linea semilunaria. The uterine appendages on the right, as examined by my finger, were apparently normal. On the cecum were a few strands of fresh lymph. The appendix appeared to be normal, though perhaps slightly rigid and thickened. It seemed best, however, to remove it, and after ligating its mesentery, it was amputated about one-third of an inch from the cecum, the peritoneum being invaginated and secured over the stump with silk. The abdominal wound, including the peritoneum, was closed with silk and dressed with iodoform gauze and a swathe.

During the day she had some pain, controlled by morphia; and that night the temperature rose to 101°, but rapidly fell to normal and remained so throughout.

Convalescence progressed steadily, twice during the first week pain from gas in the intestine being immediately relieved by a turpentine enema; and on the fifth day the bowels were thoroughly moved by a Seiditz powder. At the first dressing on the sixth day there was primary union, and by the thirteenth day all the stitches were out. She sat up on the seventeenth day, and as soon as able was moved to St. Luke's Home, wearing an abdominal supporter.

At no time since the operation — over a year now — has she had any return of the original attacks.

The portion of the appendix removed was kindly examined by Dr. H. F. Sears, at the Pathological Laboratory of the Harvard Medical School, and pronounced normal so far as could be determined microscopically.

M. BROUARDÉL, M. Ogier, and M. Du Mesnil have reported to the Academy of Medicine concerning the sanitation of cemeteries. Their investigation has demonstrated that the speedy or slow destruction of the corpse is in direct proportion to the quantity of air which reaches it; in chalky soil, dead bodies become transformed into a fatty substance, which lasts five or ten years; but if air freely circulates they are completely destroyed at the end of a year.

Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

THE RELATIONS OF THE BRONCHI TO THE POSTERIOR WALL OF THE THORAX.¹

BIANCHI and Cocchi examined twenty-one bodies, with the following results: They find that the trachea divides opposite the body of the fifth dorsal vertebra, and that its lower end is somewhat to the right of the middle line. They state that the right primary bronchus, which descends more obliquely than the left one, corresponds to the fifth intercostal space. The left primary one runs parallel to the sixth rib. (We report this without explaining it.) The area occupied by the great and medium bronchial tubes extends vertically from the fourth intercostal space or the third rib, to the eighth space, and laterally to four or five centimetres from the line of the spinous processes.

SOME ANOMALIES OF THE CRANIA OF THE INSANE.

Bianchi and Marimò have examined over a thousand skulls of insane persons. Among their conclusions are the following. They believe that cranial anomalies are, perhaps, more dependent on the locality from which the persons came than on the disease or the degree of intelligence of the individuals. In so-called degenerative forms, purely bony anomalies related to cerebral development are more rare than in psychoneurotics. There is no direct relation between insanity and cranial anomalies, but yet these are much more common in the skulls of the insane.

THE NUMBER OF PIECES IN THE COCCYX.

F. Marimò has studied the number of pieces in this fusion of vertebral elements on 66 skeletons of male criminals. There were no vertebral anomalies in 56 of these spines. Of these 21 had five pieces, 15 had four pieces only, and 11 had four pieces with a suspicion of a fifth. Of the other ten spines, six had five pieces and four had four pieces. Marimò looks on this as evidence that perhaps it is more usual to have five pieces than four in the coccyx, and especially as these are all male skeletons, believing that coccyges of five pieces are more commonly found in women. He does not seem to be acquainted with E. Steinbach's researches,² who found that five is the more usual number in men and that coccyges of four and five pieces occur about evenly in women.

THE WEIGHT OF THE TWO SIDES OF THE BRAIN.³

It is very generally held that the left half of the brain is heavier than the right, and this alleged fact has been frequently brought forward as a physical cause for right-handedness. Professor Braune has done a very important work by weighing, and having weighed by other competent men, one hundred human brains. These were divided in the median line and the cerebella with the medulla and pons cut off and bisected. Thus the table shows the comparative weights of the two sides of the whole encephalon and also of the cerebral hemispheres and the halves of the

cerebellum (with medulla and pons). The two sides of the whole were equal once. The left side was the heavier in 52, and the right in 47.

It is curious to find that if the excess of weights of the two sides is added up the right shows a preponderance. It is further to be remarked, as Braune points out, that in most cases the difference between the two sides was so slight as to deserve no consideration. In five cases in which the right side considerably outweighed the left the bodies were examined for signs of left-handedness, but none were found. Other curious results were obtained from the results of the weighing of the separate parts, which, however, was not always done. Once the cerebral hemispheres were equal. Of 91 other brains the right hemisphere was the heavier in 54 and the left in 37. Of the cerebellae five had the two sides equal. In 54 cases the left side was the heavier, in 38 the right. Thus in the number of cases we find that the hemisphere of one side is the larger about as often as the cerebellum of the other. But in this connection it must be very carefully noticed that we do not say that the larger half of the cerebellum is to be found on the opposite side from the larger hemisphere. Braune does not feel justified in drawing conclusions from the observations on the cerebellum. For our own satisfaction we have gone through his tables to see whether the larger hemisphere and the larger lobe of the cerebellum are on opposite sides. We find that the larger halves are on the same side about twice as often as on different sides.

THE PHRENIC NERVE.

Dr. John Fergusson, in *Brain*, 1891, gives evidence in support of the view, which had been previously advanced, that the phrenic contains sensory as well as motor fibres. In the autopsy of a case of progressive muscular atrophy in which the diaphragm was involved, certain fibres in the phrenics were found uninjured. Some vivisections on cats gave confirmatory results. One observation may be given in his own words: "About nine months ago I had a patient who died of an abscess in the liver. There was decided inflammation of the serous membrane covering the diaphragm in contact with the liver. In this case the pain in the back of the neck and out on the shoulder was very intense. The pain was always made worse by movements, coughing, or vomiting. These acts disturbed the diaphragm and at once started or intensified the pain in the shoulders and neck." We would suggest that this may be the long-sought cause of the pain in the acromion sometimes found in disease of the liver. The skin over the acromion and clavicle is supplied by the descending superficial branches of the cervical plexus, coming chiefly from the third and fourth nerves and practically wholly sensory. If sensory fibres from the same nerves go into the phrenic, which is derived chiefly from the fourth, the connection is evident.

THE HORIZONTAL LEVEL OF THE HUMAN SKULL.

Professor Braune⁴ has written a long paper on this subject. It is clear that such a basis for craniological observations is very desirable. What has been called the Frankfort level was one adopted by a meeting of anthropologists in that city in 1882. It is the plane bounded laterally by two lines passing from the highest point of the external auditory meatus to the lowest of the inferior border of the orbit. In many skulls

¹ This and the two following titles are accounts of papers read at the Congress of the Italian Medical Association held at Siena in August, 1891. They are taken from reports in *Arch. Italiennes de Biologie*, tome xvi, fasc. 1, 1891.

² Die Zahl der Caudalwirbel bei Menschen, Berlin, Diss., 1889.

³ Archiv für Anat. und Physiol. Anat. Abtheilung, 1891, heft iv, v and vi.

⁴ Festschrift zu Rudolf Virchow, Band I, 1891.

this is practically the same as a plane bounded by the upper border of the zygomatica. It has been objected to the Frankfort level that it is situated by the frequent want of symmetry of the two sides of the head and face. Braune made many observations on this point. He found that there is an error; indeed it is evident that there must be one, but he does not consider it serious. He finds that, as Ecker has already shown, this plane does not correspond with a physiological horizontal. Such a horizontal in fact does not exist. One can speak only of a mean position of the head in standing. He finds further that the carriage of the head varies considerably according to the position of its centre of gravity, according to the curves of the spine and the state of the muscles. He concludes very justly from all this that craniological measurements must be quite independent of the position in which the head is carried and suggests that the line in question should no longer be called horizontal.

THE OBTURATOR ARTERY.⁵

Dr. Zastschinski discusses the variations of the obturator artery in a very able paper of, however, a somewhat bewildering minuteness. The following are his conclusions:

(1) Of the irregular origins of the obturator artery the most common is that from the internal epigastric (in about 28 per cent. of all cases, normal and abnormal). That from the external iliac occurs in about 1.2 per cent., and that from the femoral in about .4 per cent. The irregular origin is most common in childhood, in the female, and probably on the right side of the body.

(2) The author renewes an old and just charge that anatomists, while discussing at length variations in the origin of this artery, are silent on the point of greatest practical interest to the surgeon, namely, the relation of the irregular branch to the crural ring, and consequently to femoral hernia. He finds that this relation varies with the origin of the artery. If it springs from the external iliac, it has no relation to the hernia; if from the femoral, the artery runs behind it. If the obturator arises from the internal epigastric, its relation varies with its point of origin. If from the first part of the artery, between the internal iliac and Poupart's ligament, it runs outside of the ring; if it arises above Poupart's ligament, it runs inside the ring.

(3) *The course external to the hernia is the rule, that internal to it a rare exception. In women the internal course is rarer than in men.*

(4) At the height of the ilio-pectineal line the obturator artery is not in contact with the posterior surface of Gimbernat's ligament, but is from 1.5 to 1.7 centimetres distant from it. There is, therefore, less danger in an operation for femoral hernia at this point than at Poupart's ligament, close to which the abnormal artery runs.

(5) Anomalies of this artery arise either during foetal life or directly after birth.

(6) New variations do not occur in adult life.

(7) The anomaly requires for its production, first, a system of anastomoses between the internal epigastric and the normal obturator, in which the blood current is directed towards the obturator foramen; and, secondly, some interference with the growth of the normal vessel.

⁵ Internationale Monatschrift für Anatomie und Physiologie, 1891.

THE CIRCUMFLEX ILIAC ARTERY.

In a recent Report we referred to a paper by Trzebicki, in which he described a case of serious bleeding from an artery in the abdominal wall which was hit by tapping at the point said to have been recommended by Munro, namely, at the middle of a line from the navel to the anterior superior spine of the ilium. Trzebicki came to the conclusion that this is not a safe place, owing to the proximity of branches of the internal epigastric, and advises either to tap in the median line or in the outer half of the above-mentioned line. Now comes Dr. Hermann Stieda⁶ to prove that the danger comes from another artery, namely, a branch of the circumflex iliac. The branch in question is thus described in Quain's anatomy: "One considerable branch, sometimes replaced, however, by two or three smaller ones, arises near the anterior superior spine, and ascends between the internal oblique and transversalis muscles, supplying the abdominal wall and anastomosing with the epigastric and lumbar arteries." According to Stieda this branch, which, following Führer, he calls the external epigastric, arises usually from four to six centimetres from the anterior superior spine measured along Poupart's ligament. It sometimes extends to above the umbilicus. At the level of the anterior superior spine it is usually from four to five and a half centimetres internal to it. This writer, therefore, protests against Trzebicki's advice to tap in the outer half of the so-called line of Munro.

THE LOBULE OF THE LUNG AND ITS BLOOD-VESSELS.

Dr. W. S. Miller, of Clark University,⁷ has done some very excellent work on this subject which he has studied by injections, corrossions, and reconstructions. Some of our readers may be glad of a description of the last named method, which we give in Dr. Miller's own words: "For the more complex lungs the reconstruction method of Born was resorted to, by which after the devotion of nearly two years to a single specimen, the desired light was obtained. The lung was first prepared by making a triple injection by which the capillaries were filled with Prussian blue, the arteries with vermillion, and the veins with ultramarine-blue gelatine. A single lobule was then removed, imbedded in paraffine and cut into sections twenty μ ⁸ thick. The magnifying power employed in reconstruction was one hundred, and each section was drawn on a wax plate two millimetres thick. As long as the terminal bronchus is in the section, it is quite easy to locate all the air-cells from section to section. Beyond the terminal bronchus the location of the blood-vessels and the shape of the air-sacs served as guides. In this way all the air-cells communicating with one bronchus were drawn on wax plates, and the sections carefully cut out. The framework left, when piled up, gave an exact model of the air-sacs, and the pieces piled gave a 'corrosion' of the same. The models were now cut in various directions in order to study the relation of the air-sacs to the terminal bronchus."

These studies, which were made on the dog's lung, gave the following result: A terminal bronchus gives off a number of passages called *vestibules*, each opening into an expansion called the *atrium*. From this three or more *air-sac passages* run to as many *air-sacs*,

⁶ Anatomisches Anzeiger, Nos. 7 and 8, April, 1892.

⁷ Ibid., 1892, No. 6.

⁸ This is twenty micro-millimetres.

which are much larger than the atria. Around the air-sacs lie the *air-cells*. To be accurate, we should say some of the air-cells, for there are others arising from the bronchi and from the atria. The air-cells do not communicate directly, one with another. Dr. Miller states that the walls of the atria are thin like those of the air-sacs, having a network of capillaries enclosed in them. We infer from this that these parts as well as the air-cells serve for respiration.

The branches of the pulmonary artery follow the bronchi. Somewhat beyond the terminal bronchus the vessel divides into as many terminal branches as there are atria. Their ramifications cover the central side of the air-sacs, the capillary-network which arises from them enveloping the whole system, and emptying into veins which lie on the peripheral side. In the lobule each air-sac has a vein running at right angles to the direction of the artery. For the most part the veins keep on the periphery of the lobule. Each air-sac has an artery on its central and a vein on its peripheral side with a rich capillary system between them.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from No. 25, page 637.)

THE Seventh Annual Meeting, held in the Army Medical Museum, Washington, D. C., May 24, 25, and 26, 1892.

SECOND DAY, AFTERNOON SESSION (CONTINUED). THE SIGNIFICANCE OF INTERMISSION ON FUNCTIONAL NERVOUS DISEASES,

by DR. W. H. THOMSON, New York.

The term functional has been applied in general to the nervous diseases in which no characteristic organic changes have yet been demonstrated. Most writers, however, regard the term as only provisional, on the assumption that some kind of structural change in nervous matter must underlie every definite nervous disorder and that such change will in time be found. It has long seemed to the author that there are intermittent nervous disorders which cannot be explained by any hypothesis of changes in nervous matter whether molecular or otherwise, but are to be explained by the varied states of the blood which causes the nervous system to functionate.

By a proper selection of functional poisons we can artificially induce some close imitations of functional neuroses and cause neuralgias, paralyses, delirium, convulsions and all intermittent symptoms of the kind and then note these symptoms disappear in about the time and order that the functional nervous attacks decline. Another correspondence between functional poisons and functional neuroses is, that in both, pathological anatomy affords no assistance in the explanation of the results. Other correspondences between functional poisons and functional neuroses were given.

Modern chemistry tells us that in the healthiest processes of our digestion a whole series of poisons are elaborated which are of the same nature with the functional poisons with which we have been long familiar as quite sufficient to cause every variety of functional nervous derangements and even to kill without the microscope or scalpel being able to tell why.

Against the perils of auto-infection the system is provided with a variety of safeguards. One of the most efficient seems to be the antiseptic properties of the digestive secretions which keep the putrefactive processes in the alimentary canal in check. The liver also subserves a preservative function against auto-infection. But the complex chemistry of these secretions is liable to numerous disturbing influences, notably nervous irritations. If nervous influences are capable of deranging the chemistry of the body, why may not such perturbances of nervous origin, occurring now and then, as nervous actions characteristically do, suffice to produce either increased amounts of alkaloidal poisons or else to diminish the effectiveness of the normal antidotal processes? These considerations seem to offer us a hint of the explanation of the intermittency in functional neuroses.

The bearing of this view of functional neuroses on treatment is as follows: First, instead of vaguely expecting help from structural anatomy to show us the pathology and then the treatment of this difficult class of diseases, and meanwhile choosing our remedies according to the old empirical methods, the physician should look for aid to advance in the knowledge of the chemistry of diet. Second, gastro-intestinal antisepsis should be studied as a particular branch of therapeutics. (The value of a certain class of purgatives, conjoined with the administration of antisepsics, has been particularly impressed upon the author's mind in the treatment of migraine, of hysteria and of melancholia with quickened pulse.) Lastly, the investigation of leucomaines, of which lithemic states are an example, is of equal importance in a great variety of morbid states, with functional disturbances.

Directed by these three principles, suggested by the progress of organic chemistry, I think that our treatment of functional diseases would be much more effective than if we continue to seek for mere drugs with specific properties or fruitlessly to wait the verdict of pathological anatomy.

A COLLECTIVE INVESTIGATION IN REGARD TO THE VALUE OF QUININE IN MALARIAL HEMATURIA OR MALARIAL HEMOGLOBINURIA,

by DR. H. A. HARE, Philadelphia.

This paper consisted of an analysis of about 150 reports from physicians through the South as to the frequency, danger, chief symptoms and treatment of malarial hematuria and hemoglobinuria, with particular reference to the value of quinine in this condition.

DR. I. E. ATKINSON: Undoubtedly the key-note has been struck when the production of hematuria and hemoglobinuria by quinine is attributed to idiosyncrasy. That quinine has any fixed tendency to produce these conditions I do not believe, but that idiosyncrasy will call forth these conditions I have no doubt. Some five or six years ago I had an opportunity of studying several cases of hematuria in patients residing in an extremely malarious district south of the James River in Virginia. They did not suffer from distinct paroxysms of malarial fever. Their hematuria would come on at irregular times, would last for weeks and months, than would stop only to recur again. They were very anæmic. It occurred to me that these cases were of parasitic origin. I looked for the Bilharzia haemotobia, but did not find it, nor did I find any parasite, but the suspicion still remains in my mind that these forms of haematuria

that are found in certain low portions of the country in which malaria prevails will be found to be due to some form of parasite not malarial. I have saturated these people with quinine, without good results. I have stopped the haematuria by other agents, notably turpentine.

DR. TYSON: I am satisfied that for the mild form of malarial haematuria which occurs in the Middle States, quinine is the remedy. In the severe cases, the blood has been reduced to a broken-down condition; the mischief has already been done and we must treat the condition which has resulted rather than prevent its occurrence. There doubtless occur all over the country even in the extreme South where these marked cases occur, certain of the milder cases such as we have in the Middle States. These milder cases are curable with quinine and I think they may account for the difference of opinion amongst Southern physicians in regard to the use of quinine. If I were living in the South and were confronted with these severe cases, it seems to me that I would prefer to run the risk of using quinine, rather than lose the chance of the good it might do.

I have had experience with the class of cases mentioned by Dr. Atkinson, but I was not led to the belief that they were due to a parasite. I never found a parasite, and it seems to me that they would not have improved had they been due to parasitic origin. I have saturated these cases with quinine and given them arsenic until they were edematous, without any effect whatever. I have had better success with astringent mineral waters, such, for example, as Rockbridge Alum Water.

DR. C. G. STOCKTON: Some years ago, at a meeting of the American Medical Association, I heard a paper upon hematuria, in which the use of large doses of alum were recommended. I have since had experience with this drug in this condition and I believe that many cases of hematuria that have resisted other remedies can be controlled by its use in large doses.

DR. HENRY: Before concluding that quinine is injurious in malarial haematuria, I think we would need to have more cases than those collected by Dr. Hare. I think it ought to be thoroughly established by microscopic examination that the cases in question are malarious and no conclusions should be drawn until such evidence is forthcoming. It may be interesting, from a historical point of view, to know that the first four cases of hematuria on record were cured by large doses of quinine.

DR. V. C. VAUGHAN: I do not believe that quinine has any marked tendency to cause hematuria. I have seen a great deal of quinine administered and have seen many idiosyncrasies, but I have yet to see a case of hematuria. I once took one hundred grains of quinine at a dose and never had any irritation of the kidneys and certainly no hematuria. In the malaria of the South there must be some other factor than in that of the North. The plasmodium is the same in Illinois as in Louisiana and still hematuria is very rare in Illinois and the North.

DR. STARLING LOVING: I have seen a good many people who have had idiosyncrasies in regard to quinine, but I have never seen blood coming from the kidneys in consequence of the influence of quinine. The cause is not the quinine but the structural change that has taken place in the kidney or elsewhere before the quinine has been administered.

DR. H. A. HARE: I did not mean to urge that quinine should or should not be given. The point that I wanted to bring out is that every case is a law unto itself; that certain cases can take quinine and in other cases it ought not to be given. As to the first cases reported having been cured with quinine; of course these cases have no more significance than any other like number of cases.

THIRD DAY, THURSDAY.—MORNING SESSION.

A paper on

PULSATATING PLEURAL EFFUSION,

by DR. JAMES C. WILSON, Philadelphia, and one on

TUBE CASTS AND THEIR DIAGNOSTIC VALUE,

by DR. I. N. DANFORTH, Chicago, were read by title.

MISCONCEPTIONS AND MISNOMERS REVEALED BY MODERN GASTRIC RESEARCH,

by DR. C. G. STOCKTON, Buffalo.

(1) The conditions usually called lithemia, chronic gout and oxaluria, in this country, are in reality almost always forms of toxemia of gastric origin.

(2) That the albuminoid diet so often advised in these conditions is frequently harmful and based on a misconception.

(3) That toxemia of gastric origin expresses itself in special symptoms which are sometimes misunderstood. That certain affections of the nervous system, the air-passages and the joints are, amongst others, the result of auto-intoxication.

From his case-book, Dr. Stockton reported a number of instances showing that neurastenia, vertigo, persistent headache, insomnia, muscular-spasm, and epileptiform convulsions, naso-pharyngeal catarrh, laryngitis, tracheo-bronchitis, asthma, Bouchard's nodules, some cases of so-called arthritis deformans and other joint troubles, depend upon gastro intestinal toxemia. These cases proved manageable by treatment directed to the digestion, as guided by a study of the gastric contents, although in most instances they had long resisted other lines of treatment.

DR. MUSSER: I quite agree as to the necessity for local treatment in such cases, but I want to emphasize the necessity of general treatment and general management also. In my care of such cases I have always been impressed with the efficacy and necessity of general treatment and management, the gastric condition being secondary. All such cases seem to arise from excessive wear and tear; and, whether by local treatment or general management, you must add to their nutrition.

DR. H. M. LYMAN: I wish to say a word as to the importance of considering the general condition of the patient. The etiology of these cases is generally connected with a history of scrofula or the arthritic diathesis, and it is important to recognize the connection of the local disease with the general substratum. Topical treatment is not, however, rendered any less necessary.

DR. C. G. STOCKTON: I do not advocate the treatment of these affections by any special plan of gastric medication or lavage, nor do I forget the importance of the general management of the cases. I wish to insist upon the utmost importance of guiding the general management of these cases upon the findings from the examination of the stomach. Just as our knowledge of certain diseases is improved by ex-

amination of the eye and urine, so our knowledge will be improved by examining the contents of the stomach. I think it is a mistake to regard these cases from the general stand-point as much as we have been in the habit of doing. While we should recognize that there is a failure in the nervous system, we should also realize that when the stomach fails, we have toxemias which give rise to a great variety of evils, and by relieving these toxemias we relieve our patient.

THE PRODUCTION OF TUBULAR BREATHING IN CONSOLIDATION AND OTHER CONDITIONS OF THE LUNGS,

by DR. CHARLES CAREY, Buffalo.

The commonly accepted physical principles involved in the production of the sound designated bronchial or tubular breathing were given. The views of Laennec, Scoda, Flint and others were given.

Metallic casts of the lungs of man, sheep, calves and dogs were exhibited. Some of them were purely tubular castings; others castings of the most minute tubules; and in some the air-cells were shown. Where the air-cells were injected by the metal, they hid the tubes which they surrounded. These castings showed a uniform bifurcation of the air-passages, the bifurcating tubes being of equal size, and the large number of tubes of sufficient size to produce a blowing sound if air passes over their mouths.

The sound of bronchial breathing is due to the laryngeal-tracheal sound, transmitted, and raised in pitch by the air blowing over the patent tubes leading to the lung, which does not receive air, or which receives it in diminished volume.

Diagrams were exhibited, showing how tubular breathing could be produced in pleurisy with effusion, where the lung is compressed up against the thoracic wall and adherent, and how, if fluid intervened between the compressed lung and the test wall, it would not be heard; how, in like manner, in a bronchial tube terminating in a cavity due to necrosis there is destruction of the vesicular expansion, and, as a result, a reverberation of the air in the cavity, as the air, rushing to other parts of the lung, blew over the mouth of the tube leading to this cavity.

DR. TYSON: Dr. Carey's paper has been of intense interest to me, and his demonstration seems to me a very reasonable one. It is certainly a great privilege to see his splendid preparations of lung castings.

DR. MASON: I have often been in doubt, in examining cases with pleural effusions, as to why in some cases we get bronchial breathing, and in others, with apparently a similar amount of fluid, we do not. I suppose from Dr. Carey's remarks and diagrams that it is due to the presence or absence of pleural adhesions.

DR. H. A. HARE: The openings of the bronchial tubes are not absolutely rigid, but to a great extent elastic, and the more elastic and yielding the tube the less the sound. In the act of respiration the air must flow with comparatively little force over the mouths of these tubes, and consequently the sound produced could not be great.

DR. J. P. C. GRIFFITH: What Dr. Mason has alluded to has often been puzzling to me, namely, the frequency with which bronchial breathing is heard in large pleural effusions. I once believed that I could diagnose between pneumonia and pleural effusion, but the older I grow the more I am coming to the conclusion that I can do nothing of the sort.

I should like to ask Dr. Carey, if, from his study of the anatomy of the lung, he has come to any conclusion as to why there is a difference in the auscultatory sounds, in the two sides of the chest, heard at the apices, in a normal condition.

DR. CHARLES CAREY: With reference to the point raised by Dr. Hare in regard to the elasticity of the bronchial tubes, while the bronchial tubes are not rigid yet they are provided with cartilaginous rings which will maintain them as a cavity in spite of the most continuous pressure of fluid from without or from inflammatory exudate.

Regarding the difference in auscultatory sounds at the right and left apices, I think the true explanation is to be found in the point of departure of the upper tube going to the right lung, which starts nearer the surface of the chest and much higher up than any of those that go to the left lung, as is shown in the metal castings.

THE DIFFERENT FORMS OF CARDIAC PAIN,

by DR. SAMUEL C. CHEW, Baltimore.

This kind of pain is found as a prominent symptom principally in three different forms of disease of the heart, and these are referred to from a clinical rather than a pathological point of view.

The first of these, and the one in which the pain exists in the most intense degree, is angina pectoris,—true angina, with increased arterial tension, occurring in paroxysms, and most frequently associated with aortic or coronary disease or with fatty degeneration of the heart. As the name of this affection implies, the pain is of the very essence of the disease itself. As recorded by Dr. Latham from his own observations, it is "a suffering as sharp as anything that can be conceived in the nature of pain, including something which is beyond the nature of pain — a sense of dying." The structural changes connected with true angina are in a very large proportion of cases those that produce cardiac ischemia, especially insufficiency or atherosomatous rigidity of the aorta, obstructions of the coronaries, or fatty degeneration of the heart. Any one of these changes may lessen the blood-supply to the heart muscle; but only the first two are diagnosticable with certainty by auscultation. On the other hand, post-mortem examinations not infrequently show great sclerosis of the coronaries and also fatty degeneration, in cases in which the symptoms of angina pectoris had not been present during life.

In view of the many cases of angina in which great and prompt relief has been given by the nitrite of amyl, I cannot but feel surprised at the opinion expressed by several recent writers that it is doubtful whether there are any remedial agents that have any power to arrest or greatly relieve paroxysms of the disease. I fully agree with Prof. F. C. Shattuck, that the value of the nitrites in angina is greater than Strümpell, the author upon whom he comments, would seem to admit.

A second form of cardiac pain, closely allied in character to the one already considered, and yet distinct from it in its pathological relations and generally less intense in type, is encountered as a complication of some cases of chronic nephritis, chiefly the contracted kidney of interstitial nephritis. In this class of cases the changes in the kidneys and sometimes in the heart are parts of a general arterio-sclerosis, and the pain in the heart is probably the expression of resistance to the blood-flow through the arterioles. In this form of

cardiac pain, the attacks may be frequent, but they are in general less severe than those of true angina connected with heart lesions. It is in cases of this kind that potassium iodide in large doses, as advised by Huchard, may sometimes prove beneficial by lessening the arterio-sclerosis. In the painful attacks, a certain degree of relief may be obtained from amyl nitrite, which though it cannot reach the organic cause of obstruction, may lessen an incidental increase of tension.

A third form of cardiac pain is found in dilatation of the heart, and is perhaps due to tension and stretching of the nerves in the heart-substance. Traube held that the pain of true angina is due to this cause. Whether it be so or not, the subjects of cardiac dilatation frequently experience pain about the heart, greater in degree, in general, in proportion to the rapidity with which the dilatation is induced. If dilatation be extreme and acutely developed, free venesection may be the best means not only for relieving pain, but also for saving life.

In all forms of cardiac pain, arsenic is a remedy of much value, from its action as an anti-neuritic, and from its power of promoting the nutrition of the heart. I hold with Anstie and Balfour, that there is no more important prophylactic tonic against cardiac neuralgia than arsenic.

It is quite possible that the chief factor in the production of pain common to all of these three forms of disease is pressure brought to bear upon the cardiac nerves or upon the cardiac ganglia themselves. The connection between these ganglia and the cervical and brachial plexuses gives a ready explanation of the extension of the pains to the arms that may occur in any form of cardiac pain. In the first, or strictly paroxysmal form, true angina, the pressure may be occasioned by the sudden tension of the arterioles; in the second form, by the general sclerotic state of the vessels; and in the third form, with dilatation of the heart, by the alteration of the heart walls.

DR. M. A. STARR: It does not seem to me that all the cases of cardiac pain can be classified under these three heads. It seems to me that a further class should be added, and that this may possibly be divided into several sub-classes. I am accustomed to see very intense pain in connection with paroxysmal tachycardia. Again, in cases of extreme neurasthenia, especially in what I term the vaso-motor type, I am accustomed to find patients complaining very much of pain about the heart. Here, it seems to me, we have two separate and distinct forms that cannot be included under Dr. Chew's headings.

DR. MUSSER: I think we would all be better off in practice if we considered all sorts of cardiac pain as angina. The doctor dropped a word about pain in the arms in association with cardiac pain. I have at present under my care a patient suffering severe pains in both arms without cardiac pain but always associated with high arterial tension and other phenomena of angina. I would like to lay stress upon the necessity of absolute rest in the treatment of all these cases and a regulation of diet based upon accurate knowledge of the actual functional disorder of the stomach that is present.

DR. A. MCPHEDRAN: In regard to the treatment of these cases, I have found nitro-glycerine even preferable to amyl nitrite, its effects lasting longer. I have at present a patient who has arterio-sclerosis and suf-

fers from cardiac angina. He is now taking forty to fifty minims of the one per cent. solution of nitro-glycerine daily with absolute relief.

DR. C. G. STOCKTON: It is satisfactory to see the relation existing between cardiac pain and the morbid anatomy in certain cases, and exceedingly disappointing in other cases to discover the same lesions without the history of pain. It is exceedingly common to find dilatation without a history of pain. The claim that dilatation of the heart muscle of the left ventricle is the chief cause of cardiac pain must be abandoned. That cardiac pain exists more frequently with morbid changes than without them is true, but further than this we can hardly go.

DR. SAMUEL G. CHEW: Referring to the remarks of Dr. Starr, I would simply state that I did not attempt to present a complete category of all the cases in which cardiac pain might occur. I merely meant to set forth the three most important conditions. Had I intended to go into a complete exposition of all kinds of cardiac conditions in which pain occurs, I might also have referred to cardiac aneurism.

I have used nitro-glycerine in a number of cases with a good deal of success, but it seems to me that its rôle is different from that of nitrite of amyl: amyl nitrite is efficacious in giving immediate relief, nitro-glycerine in lessening the disposition to these paroxysms. In the minute doses commonly given I have never seen it possess any power of checking a paroxysm when it has come on.

DR. C. G. STOCKTON: I have in mind an instance of a man in whom amyl nitrite excited but did not relieve pain, but who was completely relieved from his paroxysms by nitro-glycerine. He took half a grain of nitro-glycerine at a dose and the effect was almost instantaneous in the relief of pain. During twenty-four hours he has often taken five or six grains of nitro-glycerine.

AMERICAN MEDICAL ASSOCIATION. SECTION IN THE PRACTICE OF MEDICINE.

(Continued from No. 25, page 630.)

SECOND DAY, WEDNESDAY, JUNE 8TH.

POSITIVE AND NEGATIVE MEDICATION,

by DR. BEDFORD BROWN, of Alexandria, Va.

More or less deaths occurring in practice are due to the incompetency of physicians, the incurable nature of given disease, careless nursing, and the adulteration and substitution by dishonest pharmacy. A point of primary importance is to assure ourselves of the solubility in the stomach of the remedies we use. On this account pills and capsules are often objectionable. Not infrequently they pass through the system, and are found unchanged in the dejecta. Furthermore, in all fevers and in many other states, the solvent power of the secretions is greatly lessened. Dr. Brown uses only glycerine or honey as excipient for pills; and gums of all kinds are open to the same charge of insolubility as sugar and gelatine. Often we must use solutions; and if these are not well borne, resort to rectal medication. Here mucilage offers itself as a proper vehicle for quinine when the latter remedy is indicated. The cold bath in high temperatures may often further increase the absorptive power of the system. Moreover, one should see to it that when we

order infusions and decoctions, the latter are made out of pure materials. We should avoid cheap drugs, because that very cheapness is a confession of inferiority.

DR. H. D. DIDAMA, of New York, used tablets and wafers entirely to the exclusion of pills. It was evident that dispensing by the physician was growing in both professional and popular favor.

DR. WILSON, of Kansas City, and DR. HERRICK of Cleveland, also commended the practice alluded to.

THE RELATIVE INTER-DEPENDENCE OF ORGANS IN HEALTH AND DISEASE,

by DR. HERRICK, of Cleveland, O.

He divided the various organs into three groups. In the first were the osseous, connective, and cellular tissues. In the second the circulatory, muscular, nervous and reproductive organs; and in the third the organs of secretion, of digestion, absorption, assimilation and excretion. The first was entirely passive, the second was active in securing the alternate end of life, and the integrity of the third was necessary for the functions of the second to be performed in a proper manner. The third group had for its alternate end the transformation of food stuffs into blood.

A CASE OF ANEMIC DYSENTERY,¹

was reported by DR. E. P. GERRY, of Jamaica Plain, Mass.

RETAINED FECES,

by DR. W. D. CHRISTOPHER, of Chicago.

Bowels apparently normal, often contained scybalous masses which could be brought away only by intestinal irrigation. These masses may cause peritonitis, local or general, typhlitis, and appendicitis. They may give rise to certain catarrhal states, in which the bacterium coli communis, ordinarily harmless, becomes exceedingly virulent. Of the poisons engendered by fecal retention a small amount may be destroyed by the liver, but if this organ is impaired or the dose of the poison is large, we may have the "stercoemias," "stercoemic" of the French writers. In using rectal injections the water should be warm. Several trials may be necessary before much fecal matter comes away. Iron and belladonna are a useful combination to enable the bowel to retain its healthy state.

DR. N. S. DAVIS, JR., of Chicago, believed that fecal retention was common in those whose bowels moved daily; these evacuations were merely nature's overflow and were utterly insufficient to empty the gut.

The paper was also discussed by several of the other members present.

THE TRANSMISSION AND BEHAVIOR OF TYPHOID POISON AS OBSERVED IN COUNTRY PRACTICE,

by DR. LEWIS N. DAVIS, of Farmland, Ind.

It was generally believed that water is in the main, if not the only, channel by which the typhoid poison was conveyed, and that the germs in the stool were passive when they left the body of the patient; but in country practice there were many evidences to be had that the disease was contagious, and that it was conveyed by the air; also that the poison was virulent as it left the body. Several epidemics were quoted in support of this view.

The paper was discussed by DR. CHAPIN, of Michigan, who thought that the views of the writer were correct; and by DR. J. H. MUSSER, of Cincinnati,

who did not think the conclusions were sound. He himself believed in transmission of the poison through drinking-water.

CATARRHAL GASTRITIS,

by DR. HAROLD N. MAYER, of Chicago.

The term dyspepsia should be given up. It is a symptom and not a disease in itself. In chronic catarrhal gastritis we have too much mucus with a resulting impairment of digestive power. Out of 118 cases of gastric trouble, he had found 17 of uncomplicated gastritis (chronic) giving the usual symptoms in different combination and varying severity of epigastric pains, nausea and vomiting. Less common were fullness, coated tongue, eructations, anorexia, vomiting, constipation, etc. As to etiology, the trouble is more common in males and users of tobacco, alcohol, and excesses in iced drinks. The duration varies from months to years. The treatment is one of diet and but little medicine. Lavage had in his opinion but a limited value, because patients would not submit to it. He is in the habit of directing patients to drink from eight to sixteen ounces of very hot solution of bicarbonate of soda (ten grains to the pint) twenty minutes before eating. This removes the mucus and enables the food to come into direct contact with the mucous membrane of the stomach. Thereby normal peristalsis is set up. As to diet, trial meal of lean meat and buttered bread should be given. As the patient improves, oysters, eggs, etc., can be added. Pastry should be avoided. Bismuth, cerum, nux vomica, and tonics can only be adjuvants; papain is good where there is atrophy of the gastric tubules or organic structural changes; also in anæmic cases.

DR. STOCKTON, of Buffalo, N. Y., regarded lavage as especially good for diagnosis, if not for treatment. Many of these cases are due to excess of hydrochloric acid, and such a condition must, of course, largely determine the nature of the diet. The stomach contents are often too long retained in that organ, and imperfectly digested, even where no symptoms are complained of.

DR. LYON, of Philadelphia, had found an absence of hydrochloric acid in many of these cases.

DR. HARE, of Philadelphia, believed that the pepsin and soda mixture is often of service, because the acid to enable the latter to act overcame the alkaline effect of the soda and aided digestion. We make the mistake of prescribing too much pepsin and too little acid. Bitter tonics he believed, did more harm than good. Intestinal digestion was more powerful than gastric; hence we should give food rapidly passing into the bowels.

The paper was also discussed by DR. SCOLL, of Cleveland; PORTER, of Michigan; and DAVIS, JR., of Chicago.

THE VERTIGO OF ARTERIO-SCLEROSIS,²

by DR. ARCHIBALD CHURCH, of Chicago.

SOME NON-VALVULAR HEART MURMURS,

by DR. N. S. DAVIS, JR., of Chicago.

Non-valvular heart murmurs may give the same physical signs as valvular ones, the same changes also in the size and position of the heart. Not infrequently we have cough, dyspnea, vascular disturbance, œdema, urinary changes, etc. He related the

¹ Journal, vol. cxiv, p. 592.

² See page 650 of the Journal.

histories of several cases in which the autopsy showed the cause of the murmurs to be old and tenacious decolorized clots in the ventricles and entangled among the chordae tendinae. In one case there was an old calcified plate of connective tissue (the result of a former pericarditis) in pericardium. The murmur in this latter instance was probably due to irregular contraction in the ventricular walls, causing various eddies in the blood-current. Anemia also caused murmurs not distinguishable in their physical characteristics from those of valvular lesions.

THE IMPORTANCE OF POSITION IN EXAMINATION FOR DISEASE OF THE HEART,

a paper by DR. O. B. CAMPBELL, of Ovid, Mich.

The anatomical relations of the diaphragm are fixed, but the apex may be bagged down from change of size of the heart. If the patient bends forward the apex beat becomes more diffused transversely, but not vertically. He recommended recumbency in examining for cardiac disease, as he believed that the sounds became thereby more distinct. Out of 100 cases the murmur became more distinct in the recumbent position in 78; more distinct in the upright position in 6; not heard standing but developed on lying down, 4; unaffected by change of position, 12.

These papers were discussed by DRs. KENNEDY, of Michigan, and NEWCOMB, of New York.

THIRD DAY, THURSDAY, JUNE 9TH.

THE GENESIS OF PNEUMONIA,

by DR. W. W. PENNELL, of Fredericktown, O.

The great question is, as to whether pneumonia is a general fever or a local disease. Bacteria, the writer believes, plays only a secondary part in an exudative affection. The inflammation produced experimentally by pure cultures of this germ differs from that of the primary culture. There is not an exact analogy with so-called specific diseases, and our treatment is not such as to carry out this view. The infectious character of the disease is not observed in country districts.

As against this specific character are the following arguments: (1) more than one germ is found; (2) the patients are liable to subsequent attacks of the disease; (3) it is not contagious; (4) there are not prodromata; (5) there are no sequelæ as in typhoid fever; (6) there is a distinct crisis unless peri-infiltration or abscess result, and if the exudate can be kept in the vesicles (in quarantine as it were), it will lose its power to infect; (7) antiphlogistic treatment will often abort the disease.

The causes of the disease may be enumerated as follows: (1) cold, merely, is not a cause; (2) continued exposure with wide thermometric range; (3) dust-chill, often felt by farmers after thrashing grain; (4) as a sequela of lowered vitality due to vicious habits, especially alcohol and venery; (5) inhalation of dust and foreign bodies; (6) bad general hygiene, poor sanitation, enervating habits, etc.; (7) some persons and families appear to have a predisposition; (8) neither age nor sex gives exemption.

The three factors then, in pneumonia, appear to be, predisposition, loss or lack of normal tissue resistance, and exciting cause.

DR. BAILEY, of Kentucky, believed that the typical history points to a definite cause. The fever terminates irrespective or independently of the local condi-

tion. The physical signs show more blood infiltration the day after the crisis of the disease, than the day before.

THE CARDIAC INDICATIONS IN THE TREATMENT OF PNEUMONIA,

by DR. J. M. AMBERS, of Philadelphia.

The causes of this cardiac weakness may be threefold: (1) We may have absorption of cardiac ptomaines as a result of the disease process, with a weakening of the heart muscles. (2) There may be pulmonary obstruction produced by the presence of the exudate acting as a local barrier to the integrity of the circulation. (3) We may have the formation of cardiac thrombi which are found in the right ventricle. The latter becomes dilated and thus we have a failure of the heart power.

The signs of the muscular degeneration appear as feebleness, shortening of the first apex sound, and a similar condition of the aortic second sound. The pulmonary second sound may be accentuated, at least temporarily. Here, alcohol in moderate doses is indicated. It stimulates the cardiac ganglia, respiration and nerve-centres. It should be followed up by strichnine, which remedy has a well-known stimulating effect upon the cardio-pulmonary apparatus. Digitalis is to be used very cautiously, if at all; it may, in some cases, by lengthening the period of diastole, favor the nutrition of the heart muscles. For the local engorgement, cups, leeches and especially ice-bags are found to be very efficacious. The writer, however, distinctly deprecates the use of veratrum viride, antimony, aconite and similar cardiac sedatives. To control any cardiac over-action, morphine is the remedy *par excellence*. Venesection may be occasionally, but rarely, necessary. If there is much consolidation with difficult heart action, veratrum might be cautiously exhibited.

In regard to the temperature, where it runs high, it should be reduced without, at the same time, reducing the force of the heart's action. A fever of 104° F. needs no antipyretic measure. Beyond that point, however, we should employ cold sponging, and administer from sixteen to twenty grains of quinine daily. The coal-tar derivatives come under the ban, for they are all cardiac depressors to a greater or lesser degree, and cardiac depression is the one thing we wish to avoid.

In regard to the obstructed pulmonary circulation, we must remember, first, that consolidation of a single lobe does not greatly interfere with the breathing, but should the pulmonary second sound lose its sharp accentuation, and gradually become weaker, we have a double duty to perform; we must increase the power of the heart and deplete the lung. For this purpose we must not depend on any of the nitrites alone, as they will be useless, cups and venesection alone prove inadequate, and here we find the indication for the employment of digitalis combined with nitro-glycerine. The formation of cardiac thrombi is probably far more frequent than is generally believed, and is often associated with two factors. In this disease, the fibrin-forming elements are increased. The signs of this condition are not difficult to recognize. The impulse is irregular and the area of dulness runs beyond the sternum. There is a systolic bruit heard at the xiphoid cartilage, which is transmitted upwards and to the left.

Ammonium salts appear to be the only remedy at

our command with which to effect the fluidity of the blood, and they should be freely administered.

DR. BAILEY believed that phenacetine could be safely used as an antipyretic in pneumonia. It is as efficient as the external application of cold water, and no more depressing to the heart. He did not believe in blood-letting and had never seen a case of pneumonia where, in his opinion, venesection was indicated. He doubted the power of the ammonium compounds to dissolve clots already existing, but believed the latter might thereby be prevented from forming.

DR. TRUAX, of New York, favored venesection.

DR. HERRICK, of Cleveland, thought that the antecedents of pneumonia were to be found in the perverted action of the abdominal organs.

DR. DIDAMA, of Syracuse, thought that venesection was good for those cases in which there was extreme cyanosis with prune-juice expectoration.

DR. MUSSER, of Cincinnati, regarded the disease as specific and infectious, and the three remedies generally required are cold, venesection and rest. The indication for venesection are physical signs, the spreading of hepaticization to any areas of lung tissue and altered relations between pulse, respiration and temperature. Strychnine should be used hypodermatically. Digitalis was not of much service. Alcohol, in the form of champagne, held a very high place in his estimation. For rest and freedom from worry, nothing equalled morphine in value.

DARWINISM AND DISEASE,

by DR. HUTCHINSON, of Des Moines, Iowa.

The leading idea was that the majority if not all pathological processes are merely illustrations of various phases of evolutions and at times of benefit to animal cells and to the body at large. Reversion of type often takes place and is followed by corresponding disadvantages. Numerous illustrations are given showing practical applications of these views to the recognition of the apparent deformities in body structures and anomalies in disease.

Tissue group reversions may be either caseous, calcareous, fatty or fibroid. They might all be characterized as vital action gone wrong.

Reproductive reversions are tubercular, gumma, benign growths, malignant growths and hypertrophy.

If malignant reversion occur in connective tissue we have sarcoma with its round or spindle shaped cells. If in glandular or epithelial layers, carcinoma, which may be described as a parody on glandular tissue. From all this we must believe that there must be another factor in disease than the germ. Lowered vitality is concerned therein and our treatment should be to improve the nutrition and thus elevate vitality that the normal process of bodily evolution should go on undisturbed.

ON THE ANALOGY BETWEEN ACUTE IDIOPATHIC PLEURITIS AND ACUTE ARTICULAR RHEUMATISM,

by DR. E. L. SHURLY, of Detroit, Mich.

Pleural as well as synovial and other serous membranes, spring from some primordial layer and mesoblast and are ultimately developed into some endothelial lining; hence that would naturally be affected by any pathological process.

On the other hand, there is a correspondence between phenomena characteristics and general clinical history of the two diseases.

The presence of pleuritic effusion in rheumatism may be suspected when we have fugitive pains in the side, respiratory embarrassment or sudden exacerbation of temperature unattended by any increase in the joint disturbances. Often these appearances are regarded as due to pericarditis or endocarditis when they are really of pleuritic origin. Furthermore, the results of treatment are corroborative of the views expressed as to the identity of the two affections.

As to treatment, salicylate of soda appears to be the most efficient remedy for this condition of the pleura.

DR. STOCKTON, of Buffalo, spoke of the causes of pleurisy associated with and preceded by articular rheumatism. The former trouble might be worse than the joint disease.

DR. ATKINSON, of Baltimore, thought that while the relation between the two diseases might be true in theory, the revelations of the dead-house negatived the idea of there being any great amount of pleurisy in these rheumatic cases. Most of the cases of pleurisy could not be explained on the rheumatic theory.

In pericarditis we find pleuro-pericardial signs which may be mistaken for simple pleurisy.

DR. COLLINS, of London, Ontario, remarked that sodium salicylate will often cure inflammation in any serous membrane. The remedy can be regarded as a true germicide.

ADDITIONAL EVIDENCES OF THE VALUE OF FORCED RESPIRATION, FELL-METHOD, IN OPIUM NARCOSIS,

by DR. GEORGE E. FELL, of Cincinnati, O.

In addition to the nineteen cases previously reported the author gave five additional ones. He thought that this method of resuscitation would be applicable to drowning or asphyxia from any cause. His apparatus with its face-mask was exhibited and its method of use demonstrated.

Ten more papers were announced but not read.

AMERICAN MEDICAL ASSOCIATION. SECTION ON SURGERY AND ANATOMY.

FIRST DAY, TUESDAY, JUNE 7TH.

SURGERY OF THE GALL-BLADDER AND DUCTS.

DR. J. McFADDEN GASTON, of Atlanta, Ga., read a paper with the foregoing title, in which he referred to his experiments upon dogs and considered the literature of the subject down to the present time. Surgery of the gall-bladder is, as a rule, confined to the measures indicated in occlusion of the common duct. Where the duct is occluded by other cause than impacted stone, it is generally necessary to remove the gall bladder. The dissection of its upper portion from the lower is a rather difficult operation and attended with risk. He is accustomed to leave this portion of the bladder *in situ*. All stone obstructions should be removed, and an external opening only, should be regarded merely as a temporary expedient. The gall-bladder should be united with the intestine. While it is most desirable to establish the fistula with the duodenum, one with the jejunum would not prove less useful; but one with the colon gave an unsatisfactory result.

OBSTRUCTION OF THE CYSTIC DUCT,

by DR. W. H. MYERS, of Fort Wayne, Ind.

Stones might be present in the gall-bladder with-

out pain, and there might be pain without jaundice; but when the cystic duct was the seat of the impacted calculus the pain was very severe. The paroxysms usually come on within an hour or two after the ingestion of food, and are apparently due to the effort of the gall-bladder to empty itself by the contraction of its muscular coats. In the case which he reported several stones were removed, and the bladder and abdominal opening stitched together. Only a slight quantity of bile appeared on the dressings, but the fistula remained open. In all similar cases he would remove the viscera.

PERITONITIS FROM GALL-STONES.

DR. W. E. B. DAVIS, of Rome, Ga., claimed that the risk from the rupture of the gall-bladder or ducts, was from infection of the peritoneal cavity by septic material from the gall-bladder rather than from the bile itself. Bile is not a septic fluid, and only causes peritonitis by irritation, and then only when in large quantities. Escaping slowly, it sets up protective inflammations which cause adhesions which cuts it off from the general peritoneal cavity. Peritonitis from escaping gall-stones is rare, and even then is usually due to the septic quality of the fluid which accompanies them. In his experiments upon dogs the bile did not produce peritonitis when allowed to escape into the peritoneal cavity. Packing the wound with iodoform gauze, which was left in three days, prevented peritonitis. Of course, the danger of peritonitis is greater from the presence of a gall-stone than in experimental work where pure bile only was allowed to escape. The chief point he wished to make was the protection given by packing with iodoform gauze.

In the discussion which followed, DR. A. VANDER VEER, of Albany, N. Y., said he felt it unsafe to leave the anterior wall of the gall-bladder as advised by Dr. Gaston. He cited a case from which he removed sixty-four calculi. The external fistula remained open. Some time later the patient dying of tuberculosis, he found the duct was closed. He favored medicinal treatment for a time, but should the case grow worse, he would then operate. Jaundice is absent in the majority of the cases of the paroxysmal; pain is the principal symptom for which the surgeon must look. Perforation and a resultant septic peritonitis is the chief danger in delaying the operation. Be sure there is an opening into the intestine before closing the external opening.

DR. MARCY, of Boston, reported four unpublished cases, and urged early operation.

DR. J. F. W. ROSS, of Toronto, thought puncturing the intestine by the needle in suturing, with escape of the intestinal contents into the peritoneal cavity, was one of the greatest risks.

DR. FRIGER, of Chicago, spoke of inflammation of the gall-bladder without obstruction to the flow of bile, and thought that two operations a safer procedure than to attempt to relieve the condition all at a single sitting.

DR. ALLEN, of Cleveland, reported a case of a patient who had refused the operation and who died from the pain caused by the plugging of the cystic duct.

GUNSHOT WOUND OF THE LIVER AND STOMACH.

DR. JAMES T. JELKS, of Hot Springs, Ark., reported a case where a ball entered the left of the spinal column, just below the lower border of the ribs. The

patient when first seen had vomited much blood and was in a state of shock. An opening was made extending from the ensiform cartilage to two inches below the umbilicus. The patient again vomited blood and the stomach and ball was thrown out of the abdominal cavity into the hands of the operator. Careful examination revealed no stomach wound, but a bleeding wound was found on the posterior border of the liver. This was packed with iodoform gauze, the cavity washed out, the intestines returned, a glass drainage-tube inserted and the abdominal wound closed by sutures. Before union was perfect a fit of coughing caused the wound to break open and a knuckle of intestine protruded. This was replaced and a good recovery resulted in three weeks.

RUPTURE OF THE LIVER.

DR. FERGER reported a case of liver rupture resulting from a fall through an elevator shaft, where he found, a year later, that much hemorrhage had taken place without evil results.

DR. GREGORY, of St. Louis, thought that in Dr. Jelks' case, the patient would have recovered without any operation, unless the plugging of the liver wound had saved his life.

DR. THORN, of Toledo, reported a case of laceration of the liver left without treatment and which resulted in death from loss of blood.

DR. B. A. WATSON, of Jersey City, said shock was not always present, and if absent, what indications have we for operation if we are not to operate on all cases.

DR. WALKER, of Tennessee, cited a case in which there was shock when he was called to see the patient, who declined operation, but who died from hemorrhage some three hours later.

TREATMENT OF OESOPHAGEAL STRICTURE BY ELECTROLYSIS.

DR. D. S. CAMPBELL, of Detroit, reported seven new cases and one old case of esophageal stricture treated by electrolysis, all of which made good recoveries.

SECOND DAY, WEDNESDAY, JUNE 8TH.

THE LATE MANIFESTATIONS OF APPENDICITIS AND THEIR TREATMENT,

a paper by DR. DUDLEY P. ALLEN, of Cleveland, containing a report of six cases selected for illustration and discussion, showing the dangers and complications arising in cases which had escaped the primary attack of appendicitis. These cases included large collections of pus in the side, secondary abscess in the liver, lung, psoas muscle, thigh, and long existing circumscribed abscess opening repeatedly into the intestine.

The writer's personal experience fully convinced him of the dangerous character of appendicitis when left to follow its natural course, and he was also convinced of the soundness of the opinion of the American surgeons favoring operation in all suitable cases, as against that of a large number of English surgeons, who prefer leaving the disease to medical treatment. He had operated on several cases where the patients had supposed themselves suffering from repeated attacks of intestinal colic and the observation was well established that many cases of appendicitis resulting in operation or death had been preceded by other attacks of a less serious nature.

The use of salines as opposed to the opium treatment was discussed, more particularly in its reference to primary attacks of appendicitis than to those of a marked nature, and, while the dangers of salines were recognized, it was claimed, in certain cases, they relieved the extreme tympanites which, when present, rendered the operation difficult and apparently destroyed the patient after a successful operation had been performed, through paralysis of the intestine from extreme distension. The extra-peritoneal operation was favored, where feasible; but one great objection to this method was the undeniable fact that a certain proportion of small abscesses and foreign bodies might be overlooked, therefore, the transperitoneal operation was advocated where the surgeon considered it necessary to get at the seat of the disease. Many surgeons hesitated in undertaking so serious an operation when the disease was apparently quiescent, but where the difficulty was recurrent the operation should not be delayed too long, since the danger from recurrent attacks is considered much greater than the operation.

DESÉMOID TUMORS OF THE ABDOMINAL WALLS,

was the title of a paper to have been read by DR. NICHOLAS SENN, of Chicago, but which he had been unable to complete, and in lieu of which he made a few remarks. He cited a case where all the symptoms indicated a dilated stomach from cicatrical contraction and stenosis of the pylorus. On operating the stomach was found very much dilated, but cicatrical stenosis of the pylorus was absent. However, there were many adhesions, especially in the neighborhood of the gall-bladder, in which he found a gall-stone, which upon being removed and the adhesions separated, terminated in recovery with complete relief from the gastric symptoms. The patient had no symptoms indicating the presence of gall-stones. Another case presented the symptoms of acute intestinal obstruction of the lower part of the small intestine whereupon operation a gall-stone the size of a walnut was found about twenty inches above the ilio-caecal valve.

Dr. Senn, thought stones of this size always enter the intestine by perforation of the gall-bladder and local peritonitis, rather than through the normal biliary passage. He operated upon four cases of desmoid tumor of the abdominal wall during the past two years. These tumors originate from the mesoblast, arising from the sheath of some one of the abdominal muscles. In structure they resemble a fibroma, with some of the characteristics of a sarcoma. The four tumors were all in child-bearing women, and perhaps due to trauma of the sheath of one of the abdominal muscles. They grow more rapid than ordinary fibroma, are less distinctly separated at their margins from surrounding tissues, and are often attached internally to the peritoneum, necessitating an intra-peritoneal operation. The gap in the peritoneum is closed by making use of the omentum. The diagnosis between intra-mural and intra-abdominal tumors is often very difficult.

A specimen tumor with a drawing of its microscopic appearance was exhibited.

INTESTINAL LESIONS IN ABDOMINAL AND PELVIC SURGERY,

by DR. JOSEPH PRICE, of Philadelphia.

He said he would only present the leading features

of the part these lesions play in making the pathology of these complaints complex, and afterward consider the best way of dealing with them for the good of the patient and comfort of the surgeon. Aside from the conditions brought about by purely pathological processes, past operative complications, due principally to hasty, ill-advised work, or unfinished operations, are at the bottom of many surgical complications that would not otherwise exist. These operations are the worst surgery has to deal with, because they involve both old and new inflammations and the obliteration of anatomical landmarks previously existing.

We may also place in the same category complications due to failure to drain and the use of irritating solutions. Meddlesome interference with natural drainage, by the introduction of quantities of gauze into the pelvis, must necessarily produce adhesions. The less the peritoneum is meddled with after completing an operation, the less liable are we to have damaging adhesions. Finger-tips and not the knife should be used in separating parts and organs joined by adhesions. The complication arising by separating adhesions is hemorrhage. This should be controlled by packing and flushing the bleeding cavities with very hot water. Ligatures should be used only in exceptional cases. In all suppurative and inflammatory abdominal and pelvic disease the line of treatment should be as follows: Remove the diseased organs, carefully flush the parts free from débris, and lastly drain carefully.

THE COMPARATIVE MERITS OF INGUINAL AND LUMBAR COLOTOMY.

DR. J. MATTHEWS claimed that few if any surgeons of this country now performed lumbar colotomy, holding that the lumbar operation was practically obsolete. He, however, did not consider the inguinal operation any easier or safer, since the inguinal operation is intra-peritoneal, while the lumbar is extra-peritoneal.

THE SIGNIFICANCE OF A HERNIAL SAC.

DR. E. H. GREGORY, of St. Louis, claimed it to be of the greatest importance to diognosticate a hernia before a sac is formed. When a sac is formed the patient is liable to all of the calamities, such as incarceration or strangulation. Palliative treatment consists in the permanent evacuation of the sac; the radical cure consists of obliteration of the sac. The early diagnosis of hernia, and prevention of the sac formation, is apparently the only hope of a perfect result.

THE TREATMENT OF INJURIES OF THE ABDOMEN NOT REQUIRING SURGICAL OPERATION,

was the title of a paper read by DR. J. SCHNECK, of Mt. Carmel, Ill.

Injuries received above the umbilicus are much more serious than those below that point. This fact is apparently because the organs above the umbilicus are of more vital importance than those situated below it. The restoration of innervation is one of the most important effects to be accomplished in the way of treatment, and this is best done by the application of heat both internally and externally. The administration of stimulants has but little if any value, while hot water is always of use, even if vomited. The injection of hot water is always of value.

BASSINI'S METHOD FOR THE CURE OF INGUINAL HERNIA APPLIED TO A CASE COMPLICATED BY UNDESCENDED TESTICLE.

A report was furnished by DR. SAMUEL E. MILLIKEN, of New York, of a patient, aged eighteen, who had been under observation for a year or more, with the hope of straining the hernia, at the same time allowing the testis to descend. The truss was worn day and night with but little improvement, when it was decided to perform the radical operation after the method of Bassini, and at the same time attempt to anchor the testicle in the scrotum. The case illustrated that although the testis and hernia had escaped into the internal rings when the patient was etherized, the sac had not been reduced. After the slitting of the tendon of the external oblique muscle after Bassini's method the testis was readily reproduced by making traction on the vas deferens, a loop of which remained in the canal firmly adherent to the tunica vaginalis. The sac, being congenital, was cut off an inch above the testis and the tunica vaginalis reformed. Three catgut sutures were passed through this newly formed tunica and the bottom of the scrotum, simultaneously for fixation. The inguinal canal having been reconstructed, the wound was dressed as a single herniotomy.

HERNIA, OPERABLE AND INOPERABLE.

DR. THOMAS H. MANLY, of New York, reviewed the literature of the subject and epitomized it and considered the question of the treatment of hernia in a general way. He said :

(1) No operative scheme yet being devised which effectually removes the causes of every species of hernia, permanent cure is out of the question in certain cases.

(2) The radical cure of hernia may be regarded as one of the most satisfactory operations of surgery. That the disease sometimes relapses is not valid objection against surgical intervention, for relapses are common in the majority of operations performed on the human body.

(3) Unless there are pressing reasons, no radical operation should be encouraged for a non-strangulated hernia which gave no serious inconvenience.

(4) Hernial operations should not be performed in the extremes of age.

(5) Inguinal hernia in women should always be treated by a radical open operation, unless there are especially contra-indicating factors in the case.

(6) All operations, as a rule, on reducible unincarcerated hernia are radically curative, though there are many relapses.

(7) All operations for strangulated hernia should always include such additional steps as will effect thereafter a complete obliteration of the inguinal canal.

(8) Except in case of strangulation, very large old hernia in any of the abdominal regions, are not operable.

A FEW POINTS ON THE MANAGEMENT OF STRANGULATED HERNIA,

by DR. W. B. DEGARMO, of New York.

The death-rate from strangulated hernia is far in excess of what it should be on account of reliance placed in certain internal remedies, and to the exaggerated ideas as to the difficulties attending operative measures. A physician who tests the merits of non-

surgical methods is not only wasting valuable time, but he is assuming a grave responsibility, and probably sacrificing the patient's life. He warns them regarding cases where local pain is absent or where all symptoms have been masked by the use of the hypodermic syringe. He believes many lives have been sacrificed as a result of its use. Shock or collapse is a symptom of the gravest importance and demands very prompt surgical relief. He believes medical treatment, on the whole, is not only unreliable, but in many cases injurious, and as a means of reducing hernia, no reliance should be placed in it. The causative action of muscular spasm is not believed in. Among all external applications, but one is commended, and that is, pour a small amount of sulphuric ether over the tumor every few minutes, exposing the parts to the atmosphere to favor rapid evaporation. This, however, should be done only in the early stages and before the vitality of the parts has been impaired. Taxis, as ordinarily performed, is condemned, and a method of traction and compression described, having for its object the lengthening out the neck of the tumor, relieving by compression the engorged vessels and imprisoned fluids and gases. Anesthetics for the purpose of reducing hernia are not commended, although careful manipulation under their effect, should always precede an operation; aspiration should not be used except in some very rare cases.

He believes the Emly operation to be one of the most simple in surgery, and should always be done early. Waiting for fecal vomiting is a relic of the (surgical) dark ages. It is always safer to open and examine the contents of the sac. In amputating masses of omentum, numerous aseptic silk ligatures should be used, instead of tying off with one ligature of catgut. Should the bowel be of a dark chocolate color, but not necrotic, hot compresses should be applied after cutting the constriction. Where the gut is gangrenous, a temporary artificial anus is believed to be the safer method for the patient. The use of methods for favoring permanent cure to follow operations for relief are strongly commended. The author has used silk exclusively for four years in all hernial operations, and since he has himself sterilized and prepared it, has had no trouble about its coming out of the deep muscular tissues.

THE MANAGEMENT OF GANGRENOUS HERNIA.

DR. JOSEPH RANSOHOFF, of Cincinnati, read a paper and cited the statistics of strangulated hernia during the past twenty years. Of these but fourteen per cent. were found gangrenous. Four cases were reported in detail. In two, the suspicious area was returned to the abdomen; they both died. In the other two the constricting band was divided, the gangrenous portion excised, and the healthy part returned to the peritoneal cavity; both these latter cases recovered. The author discussed at length the steps of the operation and the logic by which this treatment might be expected to give satisfactory results.

DISCUSSION OF HERNIA.

DR. MARCY, of Boston, after discussing the subject in full, enumerated as essentials for the operation:

- (1) Asepsia.
- (2) Resection of the sac.
- (3) Restoration of the obliquity of the canal in inguinal hernia in the male.

(4) Closure of the wounds by means of buried tendon sutures.

(5) Coaptation of the skin by a blind buried suture, and sealing with iodoform collodion, re-enforced by a few fibres of cotton without drainage.

DISCUSSION ON ABDOMINAL SURGERY.

DR. B. A. WATSON, of Jersey City, said the essential in all abdominal surgery was asepsis. Had we any means of knowing the condition of the peritoneal cavity as to asepsis, we would know when to operate and when operation should be avoided or postponed. In the absence of this knowledge he was inclined to wait a short time and be guided by the symptoms presenting, watching with the utmost care and prepared to operate at any hour. He strongly disapproved of Dr. Link's idea that the family physician and the country doctor should operate in all cases at once and not wait for the arrival of a surgeon, claiming that no one unfamiliar with the details of antiseptic work should attempt an abdominal operation, or, indeed, any operation whatever.

Recent Literature.

Diseases of the Skin. A manual for practitioners and students. By W. ALLAN JAMIESON, M.D., F.R.C.P. (Ed.). Third edition. Philadelphia : Lea Bros. & Co.

A third edition of Dr. Jamieson's work on diseases of the skin has appeared, enlarged and enriched by the additions of increased space to several subjects that have of late come into prominence, as dermatitis herpetiformis, pityriasis rubra pilaris, lymphangioma circumscriptum, etc. The author's plan of interpolating a description of cases, of which 118 are scattered through the volume, makes the book an interesting one for the expert, but diminishes its value considerably for the student and general practitioner, as many of these cases are cited on account of some obscure deviation from the ordinary type, or leave some doubt as to their nature. Exception will be taken by almost all modern histologists to the author's view (the old one) of the anatomical nature of molluscum contagiosum. Whether or not the view that the contents of these tumors are in part composed of causative gregarines be accepted, it is quite generally conceded that the growths are not connected with the glands or hair follicles. It is also a disappointment not to see lupus classified distinctly under the heading of tuberculosis, in an edition bearing the date of the current year.

In the matter of treatment the book is to be commended as affording much that is interesting and suggestive, as an account of the management of almost every specified case is included. Whether the modifications of previously existing methods that have been proposed by Unna, of whom the author is an ardent disciple, have in every case constituted an important advance in treatment, may be as yet regarded as a matter of individual opinion.

Dr. Jamieson's large experience ensures for the book a wide reading, especially among those particularly interested in dermatology. The book is original, and on the whole strong : and the writer impresses us, even when we differ from him, with a sense of his honesty and straightforwardness. The nine colored illustrations may be characterized as fair.

A Practical Manual of Diseases of the Skin. By GEORGE H. ROHÉ, M.D., assisted by J. WILLIAMS LORD, A.B., M.D. No. 13, in the Physicians and Students' Ready Reference Series. Philadelphia and London : The F. A. Davis Co.

As this book is intended only to serve as a handbook for the general practitioner, and does not claim to be anything more than a brief *résumé* of the more important established facts, criticism is, of course, limited to the care with which the matter has been compiled. Unfortunately, the book does not bear the mark of great painstaking. The space is most peculiarly apportioned, nearly one-third of the whole book being devoted to the cutaneous manifestations of syphilis, while almost as much space is given to exfoliative dermatitis as to psoriasis. The statements made do not always coincide with those of a majority of modern specialists. At the end of the book are numerous formulae, but it is noticed that many of their numbers do not tally with those in the text that refer to them. In a word, the book cannot be regarded as a valuable addition to the "Ready Reference Series."

Higher Medical Culture : Medical Science Based on the Four Vital Properties and Laws of Organic Force. By W. R. DUNHAM, M.D. Cambridge : Printed for the author. 1892.

The four vital properties of our author are named sensibility, sensation, instinct, and contractility. There seems to be "three departments for the exhibition of applied law of organic force."

Those who desire to acquaint themselves with the results which the author reaches after propounding these propositions had better procure his little book from him and read it. We have no desire to prejudice a possible reader one way or the other, as we are sure we do not understand what is presented in these pages.

On the Simulation of Hysteria by Organic Disease of the Nervous System. By THOMAS BUZZARD, M.D., F.R.C.P.L., etc. 16mo, pp. iv, 113. London : J. & A. Churchill. 1891.

This little volume is the reprint of a presidential address delivered before the Neurological Society of London. The author first speaks of cases of weakness of the legs often thought to be functional, but due probably to progressive muscular atrophy beginning in the ilio-psoas muscle, and characterized by inability to flex the thigh strongly on the pelvis, or to go up stairs. He next dwells upon the value of absence of knee-jerk as a distinctive feature of organic disease, and of the absence or diminution of the plantar reflex as an indication of hysteria, provided there be no distinctive symptoms, such as loss of knee-jerk, atrophy, degenerative reaction or spasticity. More than half the book is devoted to cases of atypical multiple sclerosis, which is very often mistaken for hysteria. Most hysterical symptoms may be due to multiple sclerosis, and temporary paralyses, shifting from one limb to another, are more probably due to sclerosis than to hysteria. In sclerosis, the plantar reflex is apt to be retained, the knee-jerks may be exaggerated, squint or optic atrophy may occur, and if intention tremor develop the diagnosis may become clear. "The figure of Hysteria shrinks in proportion as the various forms of organic disease acquire greater solidity and sharper definition." The author's style is clear and agreeable, the mechanical execution admirable, and no one can regret the half-hour spent in its perusal.

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THE PLACE OF DYSPEPSIA IN GENERAL
 NOSOLOGY.

ONE of the essayists at the recent meeting of the American Medical Association thinks that "the time has now come for discarding the term dyspepsia altogether as a pathological entity, and of relegating it to the limbo of broad symptom-groups occupied by such terms as heart-disease, paralysis and deafness."¹

What to do with dyspepsia has long been the puzzle with writers on both special and general pathology, and we see the subject disposed of variously, according to prevalent doctrines. To some authorities, the term is only an expression of material lesions of the stomach, to others, it is from first to last a neurosis. From Broussais down to the present time, multitudes have regarded dyspepsia as a manifestation of chronic or catarrhal gastritis. Thus Leube, for the most part, treats it in Ziemssen's Cyclopedias, and in the article on "Disorders of the Stomach," in Wood's Reference Handbook, the term is not used. Fox, in his "Diseases of the Stomach" has only one form of dyspepsia, the "atonic" (that is, nervous). In 1878, Leube demonstrated the fact that many cases which had previously been grouped under the term gastric catarrh were clearly free from catarrh. The stomachs were to all appearances organically sound. He found derangements of the gastric juice associated with many of the troubles of digestion; the use of the stomach-tube now gave an immense impetus to the study of gastric disorders. Some enthusiastic workers in this line outstripped Leube himself, and came to regard dyspepsia as simply a plus or minus of hydrochloric acid. Germain Sée's work on the dyspepsias (1879-1882) is written from this point of view, and the still more recent and masterly treatise of Hayen and Winter treats of dyspepsia as, in the main, a morbid chemical phenomena. "To constitute a dyspepsia," says Germain Sée, "a chemical disorder is the condition *sine qua non*." The terms *hyperchlorhydria*, *hypochlorhydria*, *anachlorhydria* express Sée's principal divisions; these terms almost correspond to the *hyperpepsias* and *hypopepsias* of Hayen and Winter. According to these writers, the chemical alteration is the primordial lesion, the nervous trouble and the digestive derangements which follow are only secondary effects.

There is already vigorous reaction against this too exclusive way of regarding the subject; neurasthenia is coming to the front as the primordial lesion, the chemical and functional derangements being effects, and this is especially the standpoint of the French school of medicine under the leadership of Charcot, Debove, Bouchard and others. It is agreed that the term dyspepsia stands for a definite clinical syndrome that demands separate and independent consideration in treatises on medicine; and the authors of the new *Traité de Médecine* seem, in handling this subject, to have attained the proper mean, assigning to the nervous and constitutional element the primordial rôle, while making due account both of morbid states of the mucous and muscular coats and of chemical derangements of the gastric juice. Recognizing the fact that the same causes may give rise to all the different forms of dyspepsia, and that in the present state of science the classification that commands itself must be pathological and clinical rather than etiological, they divide the dyspepsias as follows, into:

(1) Simple neuro-motor dyspepsia without hyperacidity, organic or hydrochloric.

(2) Hyperchlorhydria.

(3) Hypochlorhydria with stagnation of the contents of the stomach and often hyperacidity.

Dilatation of the stomach, concerning which so much has been written of late years, and which has been the subject of a very ingenious theory by Glenard, is reserved for separate consideration. It is a common resultant of a number of etiologic factors; stenosis of the pylorus from any cause, fatty degeneration or atrophy of the muscular coats, etc. Under the name of dilatation of the stomach, Bouchard has described a morbid state in which the gastrectasis is the primordial fact, and in which the sensory and dyspeptic phenomena are more or less pronounced. He attributes to toxæmia from absorption of poisons (toxines) produced in the stomach the principal rôle in the genesis of the accidents observed in connection with gastrectasis. Just here, it is proper to say that modern pathologists are assigning more and more importance to the part which these toxines of gastric origin play in the symptomatology, direct and remote, of all the dyspepsias, and what a few years ago was ascribed to lithæmia more properly comes under the head of toxæmia, as is well shown by Dr. C. G. Stockton in his address last month before the Association of American Physicians, at Washington.

(1) Dyspepsia with neuro-motor predominance includes nearly one-half of the cases of dyspepsia. Persons belonging to this category are affected with *nervöse dyspepsia* (nervous dyspepsia), as Leube understood it. The symptoms are those of discomfort and pain, with

¹ Dr. Harold N. Meyer: On Catarrhal Gastritis.

weight in the epigastrum after eating. The stomach and abdomen are flatulently distended, and there are eructations. Among the toxicemic symptoms are headache, disinclination for study or exercise, malaise, vertigo, insomnia. Constipation and haemorrhoids are seldom absent; the dyspepsia is both intestinal and gastric. The appetite may remain good, and there may be no emaciation. In a word, these patients present to a greater or less extent the symptoms peculiar to neurasthenia. A neuropathic temperament is the foundation of their ailments.

Repeated examination by the Debove tube reveal neither organic hyperacidity nor hyperchlorhydria. There may even be hydrochloric deficiency, but this is of little importance if the muscular mechanism of the stomach is all right—if there is no stagnation and resulting-exaggerated acid fermentation. The work of the stomach may be a minimum quantity, almost nil, without the general condition suffering much in consequence, as has been shown by many experimental and clinical facts. "Robust healthy persons, not at all dyspeptical may present a marked degree of hyperchlorhydria." Dogs have had their stomachs extirpated, and have got well and remained in health, with their oesophagus opening into the duodenum; and Van Noorden, by his experiments in the "dosage" of urea of the ingesta and egesta, has found that albuminoid substances are as well utilized in dyspeptics with insufficient gastric digestion as in healthy individuals.² Facts of this kind are not lacking to show that neither an excess nor a deficiency of HCl in the gastric juice is of sufficient importance to characterize a clinical form of dyspepsia.

(2) The second division of the dyspepsias, "hyperchlorhydria," indicates a constant relation between the dyspeptic manifestations and an excess of HCl. "The vice of secretion—the acid hypersecretion—seems to be often the expression of a state of general neurosis with predominant gastric determination." In other words, the hyperchlorhydria and the troubles of secretory and motor innervation all take their rise in the same neuropathic state.

Hyperchlorhydria presents itself under numerous clinical types, all of which are characterized by pain which is often most marked when the stomach is empty. The crises of pain resemble those of migraine or tabes, and often suggest the possibility of a real material alteration in the cerebro-spinal axis. Generally the pain comes on near the close of a meal, is in the pit of the stomach and takes on an increasing intensity.

This pain is relieved by the ingestion of a little liquid, sometimes of food, and especially of an alkaline liquid. In some patients it comes on regularly at one or two o'clock in the morning. Sensation of burning or rending, radiating to the back, are complained of. These pains when very intense are followed by vomiting. The dilution of the gastric juice, its saturation by alkalies, its mechanical expulsion, are conditions which suppress the cause of the pain by suppressing

the action on the mucous membrane of a gastric juice charged with HCl (Mathieu).

These dyspeptics endure fasting poorly, eat much, and do better on a diet largely animalized. They are nervous, irritable, easily fatigued, and are tormented by insomnia. A multitude of hypochondriacs belong to this class. They, too, have abdominal distension, eructations, and constipation. When the gastric juice, siphoned from the stomach, is examined, it is found to be inordinately acid from HCl (two to three per thousand), and the chyme shows albuminoids to be much better digested than starches. With the filtered gastric juice, artificial digestions rich in peptones can be rapidly obtained.

Hyperchlorhydria was described for the first time by Reichmann in 1882 and 1884.

(3) The third type of dyspepsia is "hypochlorhydria, with organic hyperacidity and stasis." Here, hydrochloric acid secretion is deficient, but there is excess of organic acids from abnormal fermentations taking place in the stomach. There is more or less dilatation from atony and relaxation of the muscular walls; foods and liquids stagnate in the stomach and ferment, giving rise to acid eructations, pyrosis and pain. Vomiting is also a frequent symptom. Undigested food long remains in the stomach. If the contents of that organ be siphoned off in the morning after fasting, quite a quantity of sour rancid liquid will be obtained; there will be from a pint to three pints with débris of the last meal. Gastritis is apt to supervene sooner or later in these cases.

The writers of the new *Traité de Médecine*, it will be seen, consider all the dyspepsias, except such as clearly follow gastritis, cancer, round ulcer, or are secondary to heart disease, liver disease, etc., as nervous in their origin. They refer to the fact that we often find simple neuro-motor dyspepsia with or without excess or deficiency of HCl in persons of neuropathic or arthritic family (arthritic may be regarded as almost the equivalent of neuropathic). In these patients, we see the neuropathic manifestations precede the dyspeptic. Moreover, the general symptoms: Headache, vertigo, dizziness, erratic pains, etc., are such as belong to the neurasthenic series. A similar dyspeptic tendency is noticed in candidates for gout, diabetes, in the migrainous, in exophthalmic goitre and in hysteria. Nervous dyspepsia has often been known to arise in predisposed persons under the influence of strong emotions, disappointments, reverses. Lastly these patients are habitually relieved by a treatment addressed especially to the neuropathic state, as rest, hydropathy, and change of climate.

The principal cause of dyspepsia being as above stated,—as occasional or exciting causes, may be mentioned, mental emotions, excesses in eating or drinking, the abuse of highly seasoned meats, indigestible foods generally, and of alcoholic liquors. In some cases, nervous dyspepsia has been known to follow influenza, and in not a few it has succeeded an attack of typhoid fever.

² Ztschr. f. Klin. Med., 1890.

MEDICAL NOTES.

THE LATE DR. D. HAYES AGNEW left an estate of about \$250,000. He bequeaths to the University of Pennsylvania, \$50,000, his work on surgery, his library and anatomical collections.

CHOLERA has spread from Persia to the provinces on the south shore of the Caspian Sea, and from these provinces to Russian ports on the west shore. The appearance of the disease at Baku, the centre of the petroleum trade, threatens those southern provinces of Russia, in which the inhabitants are already weakened by famine.

ROTUNDA HOSPITAL, DUBLIN.—The governors of the Rotunda Hospital in Dublin, have decided to build an additional hospital building, and have already raised a large part of the necessary funds for the purpose.

EXPERIMENTS IN SNAKE POISONS.—There has recently been erected, in connection with the Calcutta Zoological Garden, a building for the study of the poisoning of snakes. Specimens of the principal poisonous snakes will be kept.

A MICROBE OF BERI-BERI.—The *Review Scientifique* of May 28th states that Dr. Leopold, of Montevideo, in cultivations of the blood of animals suffering from beri-beri, has discovered a micrococcus which, after culture and injection into the blood of healthy animals, seem to reproduce the two chief forms of the disease, generalized œdema due to dilatation of the heart, and paralysis.

SUCCI THE FASTER.—Succi, the Italian who has made himself prominent both in this country and in Europe, by his fasting, has become insane and has been sent to an asylum in Paris. Two years ago he completed a period of forty days fast in London, and later in New York a fast of forty-five days. He recently attempted another one in London, but broke down before it was accomplished and went to Paris, where he was soon afterwards found to be insane.

BOSTON AND NEW ENGLAND.

THE ALUMNI ASSOCIATION OF THE HARVARD MEDICAL SCHOOL held its second annual meeting and dinner on Tuesday, June 28th. About 260 members sat down to dinner, at which Dr. J. R. Chadwick presided. Speeches were made by the presiding officers, President Eliot of the University, Dr. Wm. Pepper, Provost of the University of Pennsylvania, Prof. Wm. H. Welch, of the Johns Hopkins University, and Dr. James C. White, President of the Massachusetts Medical Society. An able and interesting report was presented by the committee appointed to visit the medical school. The occasion was very successful from every point, and will be more fully reported in a future number.

DRAINAGE INTO THE BACK BAY.—On account of the odors from the Back Bay in Boston at low tide, the Board of Health have taken measures to prevent the houses on the water side of Beacon Street from

discharging their house sewers into the bay, as is at present done.

SMALL-POX IN QUINCY.—A case of small-pox is reported from Quincy, the patient being a girl sixteen years old, who has recently arrived from Sweden. She was promptly isolated, as were also the other inmates of the house. Every one who was suspected of having been exposed to the disease was vaccinated.

A RHODE ISLAND LAW FOR THE PREVENTION OF BLINDNESS.—A law has recently been passed in Rhode Island similar to those in New York and Maine, part of which is as follows: "Should any midwife or nurse, or person acting as nurse, having charge of an infant in this State, notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse, or person acting as nurse, so having charge of such infant, to report the fact in writing within six hours to the health officer, or some qualified practitioner of medicine, of the city or town in which the parents of the infant reside."

Miscellan.

THE THERAPEUTIC VALUE OF SUPPURATION.

VOCHIER having observed improvement in cases of puerperal septicemia, taking place coincidently with the appearance of a focus of suppuration in some part of the body, suggested that in certain cases the establishment of suppuration by the subcutaneous injection of turpentine might be of therapeutic value. Later a case of pneumonia was reported by Lepine, in which this method appeared to have been of great benefit. A case has recently been reported by Gingeot.¹ A man twenty-nine years of age, of alcoholic history, suffering from acute pneumonia, received on the ninth day subcutaneous injections of turpentine into the four limbs. At the time his condition was very critical. The injections were very painful and were followed by extensive edematous patches, and later by suppuration. Within two hours of the first injection the temperature fell two degrees, and this was followed by subsequent improvement. The patient ultimately recovered. A similar case is reported by Raoul in which a patient, apparently moribund on the sixth day, was apparently cured by similar treatment. The explanation of the improvement given by Gingeot is that the production of artificial abscesses, by setting up leucocytosis, brings up reinforcements of phagocytes, as it were, to the assistance of the original defenders.

THE LEGAL REQUIREMENT OF PROFESSIONAL SECRECY.

The Supreme Court of Michigan has confirmed a decision bearing upon the conduct of physician who introduced an unprofessional, unmarried man as his assistant in a case of confinement, the patient naturally supposing that the assistant was a physician.² The

¹ Sem. med., May 18.

² International Medical Magazine, June.

defence of the doctor was that he was sick and very much fatigued, and therefore asked this friend to accompany him. No objection was made by the patient or her husband, and it is agreed that he behaved himself in a perfectly proper and becoming manner. The plaintiff having found out later, not only that he was not a medical man but that he was young and unmarried, brought a suit to recover damages sustained from shame and mortification upon discovering the true character of the defendant. The court held that the plaintiff and her husband had a right to presume that a practising physician would not, upon an occasion of that character, take with him and introduce into the house a young man in no way, either by education or otherwise, connected with the medical profession. This person could hear, if not see, all that was said and done. The fact that at the time the plaintiff consented to his presence supposing him to be a physician does not preclude her from maintaining an action and recovering substantial damages upon afterwards ascertaining his true character.

EFFECTS OF AN OVERDOSE OF CODEINE.

METTENHEIMER reports a case showing the effects of an overdose of codeine.¹ An elderly lady consulted him for a slight catarrhal, non-febrile affection which, however, gave rise to a troublesome, spasmodic form of cough. For this he prescribed 0.03 grammie (about half a grain) of phosphate of codeine, in the form of a pill, to be taken every three hours. The patient, however, swallowed four of these pills, or about a grain and a half of the codeine salt, at once. Shortly afterwards she vomited twice and suffered from abdominal pain. There was, too, suppression of urine, and she felt very ill, being sleepy, but unable to go to sleep. The next day she was still drowsy and had no appetite, but there was no return of the sickness. She was then seen by Dr. Mettenheimer, who found the pupils contracted, the pulse hard and quick, and the respiration accelerated. The cough had entirely disappeared. The contracted state of the pupils, the loss of appetite, and the abdominal pain persisted for several days. No urine was passed until thirty-six hours after the pills were taken. On the third day the drowsiness had passed away. The cough did not return for a week, and when it did it was comparatively slight. This case seems to show that codeine in large doses has a very similar effect to opium, and that it may prove a most efficient remedy for some kinds of cough. As the tongue remained clean it would appear that the vomiting was due to cerebral, rather than to gastric, irritation.

PREPARATION FOR THE STUDY OF MEDICINE.

DR. E. L. HOLMES,² in his doctorate address at the Rush Medical College, takes up the question of the study of Latin and Greek in connection with the study of medicine. The address was intended for those who cannot pursue a collegiate course preparatory to their medical studies, and who consequently may enter a medical school with absolutely no knowledge of either Latin or Greek. So many medical technical terms

are directly taken from one or the other of these languages that a certain amount of knowledge of them is almost necessary. Without having studied either language when he receives his degree of Doctor of Medicine, a student has learned a large number of Greek and Latin words with their English technical meanings. The English language contains so many words from one or the other of these languages that the study of English alone involves the unconscious study of a certain amount of Greek and Latin. The author proposes by the use of very simple grammars to take advantage of this for teaching as much as is required for medical reading. A rudimentary Latin and also a Greek grammar should be constructed for the primary object of teaching English, secondary of teaching Latin and Greek. In connection with these there should be a reader containing extracts from classical prose or poetry, almost every word of which should be a good English word. By learning the meaning of the roots and prefixes and suffixes of those words which are used both in literary English and in medicine, he would be able to appreciate and to find out for himself the derivation of most of the compound words which he meets. After this study of English, Latin and Greek, the student can understand without difficulty the technical terms of every science in every modern language. He has a systematic knowledge of sufficient Latin and Greek to enable him to continue along his readings of classics, if he has the time and taste so to do. The author considers there is great need of such elementary text-books for the use of professional students.

THE CURE OF INFECTIVE DISEASES.

G. AND F. KLEMPERER, in the *Berliner Klinische Wochenschrift*, May 2d, treat of this subject in regard to immunity induced subsequently to infection.³ The value of the immunity depends upon its degree and the rapidity with which it can be established. The most rapid method is by blood serum, as discovered by Behring and Kitasato. In animals the cure of several diseases has already been thus effected.

Every well-marked and acquired immunity is transferable to other animals. The serum treatment is a specific one. The authors have been able to establish immunity in the same rabbit against two separate infections, namely, that of the pneumococcus and that of mouse septæmia. The difficulty of obtaining the serum must constitute an obstacle to hematherapy, and hence a simpler method of establishing immunity is sought for. This consists in the introduction of an attenuated culture into the veins. By this process the protective substances have still to develop, whereas they are already present in the serum. Thus the immunity conferred by the former method occurs only after a few days, but that by the latter in a few hours. Previous failure by the first method has been due to the feebleness of the immunity induced. The degree of the immunity depends on the amount of the culture introduced. The difficulty lies in concentrating the latter. The authors have effected by means of the air-pump down to one-tenth of its former volume, and without the application of too great heat. Against the pneumococcus infection some degree of the immunity is present on the following day. In a

¹ Lancet, June 18th.

² Journal American Medical Association, June 4th.

³ British Medical Journal, May 29th.

very virulent pneumococcus infection in rabbits this method does not succeed, but a less virulent infection can be easily cured. Thus, in addition to the serum treatment, a slowly-developing infection in animals can be cured by an immunity subsequently induced by the introduction of an attenuated culture into the veins.

The advantage of this method consists in the readiness with which the remedy may be prepared, the disadvantage in its uselessness against sudden and rapidly fatal infection. In man the majority of the infective diseases develop slowly, so that they may permit of this method of treatment.

THERAPEUTIC NOTES.

RESORCIN IN GASTRIC ULCERS. — Pope¹ uses resorcin in a dose of five grains three times a day in cases of gastric ulcer. It is both antiseptic, analgesic and haemostatic. Its analgesic property being the most valuable, enabling the stomach to tolerate food. He has also given it with advantage in gastric cancer.

TREATMENT OF POISONING BY COCAINE. — Eloy² gives the following directions for the treatment of acute poisoning by cocaine. The patient is placed in a horizontal position in order to prevent syncope, and his face bathed with cold water. If convulsions come on cold should be applied. If asphyxia is present flagellation, massage and artificial respiration are resorted to, and if the respiration depends upon the tetanic contraction of the respiratory muscles inhalations of chloroform are employed. For the intense pallor it is well to give inhalations of nitrite of amyl. Should these means prove insufficient, it may be well to administer strong coffee or caffeine, or if swallowing is impossible, hypodermic injections of ether. The entire object of the treatment is to moderate the reflex excitability of the nervous system, to sustain the heart, and to re-establish the equilibrium of the circulation.

PERMANGANATE OF POTASSIUM IN THE TREATMENT OF DIPHTHERIA. — Bowman³ reports several cases of diphtheria in which most excellent results were obtained by the use of a solution of permanganate of potash of the strength of three grains to the ounce. Three or four applications an hour were made directly to the membrane with a large camel's-hair brush for eight or twelve hours. After this once every two to six hours is sufficient. In some cases a spray is a better method of application.

METHYL-VIOLET IN MALIGNANT TUMORS. — Nanu has obtained very good results⁴ in ten out of twenty-five cases of malignant tumors by injecting methyl-violet according to the system of Von Moorhof. The diagnoses were confirmed by microscopic examination. On the other hand, Torrie after a trial of this method in several cases comes to the conclusion that it is never of any benefit and may be harmful.

CHLORIDE OF ZINC INJECTIONS IN UNUNITED FRACTURES. — Menard⁵ reports a case in which an oblique compound fracture of both bones of the leg had failed to unite at the end of five months. Remembering Lannelongue's experiment on the formation of

bone in rabbits as the result of injections of chloride of zinc into the periosteum, Menard then injected 1.25 g. of a one in ten solution of chloride of zinc into the outer and posterior surfaces of the tibia and into the space between the fragments. The injection caused a good deal of pain, but after immobilization of the limb for a fortnight the swelling of the soft parts had completely disappeared, and the seat of the fracture was surrounded with firm callus. A month after the injection consolidation was complete and the patient was able to walk.

A NEW TREPHINE. — Tauber⁶ describes a new form of trephine, by means of which a disc of bone in the shape of a truncated cone can be removed from the skull. The advantage claimed for this shaped button is that on replacing it the level of the skull is preserved, that is, the button does not tend to fall in, also its margin is in close contact with the hole from which it was removed. The author believes that with this instrument, a surgeon may safely remove a series of discs and thus expose a large extent of the surface of the brain. The openings which are not united may be immediately filled up with every confidence of complete closure by speedy osseous reunion.

⁵ Centralbl. f. Chir., No. 26, 1892.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, JUNE 18, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrhoeal diseases.	Diphtheria and croup.		
New York	1,515,381	358	410	23.84	16.56	7.68	3.72	3.66	
Chicago	1,069,250	280	280	12.89	8.51	5.35	5.00	1.40	
Philadelphia	1,046,364	420	185	11.48	5.31	5.35	6.30	1.01	
Brooklyn	806,343	366	166	16.20	12.67	5.13	1.68	1.64	
St. Louis	451,770	174	64	16.80	5.60	11.76	1.12	2.24	
Boston	448,471	169	65	13.56	13.50	2.96	—	6.06	2.50
Baltimore	434,439	—	—	—	—	—	—	—	
Orlando	325,849	87	31	21.42	7.14	5.25	—	2.38	
Pittsburg	245,066	—	—	—	—	—	—	—	
Milwaukee	240,000	80	44	15.00	6.25	2.50	11.25	—	
Washington	229,392	137	64	24.09	6.57	16.94	.73	—	
Nashville	76,168	32	11	25.00	—	12.50	6.25	—	
Des Moines	62,531	31	11	10.63	—	11.76	—	—	
Portland	34,425	11	6	7.14	14.28	—	7.14	—	
Worcester	84,655	30	10	6.66	6.66	—	3.33	—	
Lowell	77,696	39	17	20.48	5.12	20.48	—	—	
Fall River	74,398	32	16	21.93	5.13	9.35	3.13	—	
Bridgeport	10,072	20	—	—	—	—	—	—	
Lynn	52,247	11	2	14.28	—	14.28	—	—	
Lawrence	44,654	18	11	22.22	—	11.11	16.66	5.55	
Springfield	44,179	14	7	14.28	7.14	7.14	—	—	
New Bedford	40,733	20	10	8.00	—	6.00	—	—	
Holoke	35,637	—	—	—	—	—	—	—	
Salem	30,413	10	3	2.66	—	1.00	—	1.00	
Haverhill	27,412	9	—	—	—	—	—	—	
Brockton	27,294	4	2	—	50.00	—	—	—	
Taunton	25,445	10	1	20.00	—	—	—	10.00	
Newton	24,376	6	0	—	—	—	—	—	
Quincy	23,311	1	—	—	—	—	—	—	
Pittsburgh	22,037	11	—	—	—	—	—	—	
Waltham	18,707	6	0	9.00	—	—	—	9.00	
Pittsfield	17,281	3	3	33.33	—	—	—	33.33	
Quincy	16,723	1	0	—	—	—	—	—	
New Hampton	14,489	6	1	—	—	33.33	—	—	
Newburyport	13,947	3	—	—	—	—	—	—	
Brookline	12,103	11	4	9.09	—	—	—	—	
Medford	11,079	7	0	—	—	14.28	—	—	
Everett	11,068	2	0	—	—	—	—	—	
Hyde Park	10,193	3	0	—	—	—	—	—	
Peabody	10,158	2	0	—	—	—	—	—	

Deaths reported 3,219; under five years of age 1,383; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhoeal diseases, whooping-cough, erysipelas) 2,023; acute lung diseases 246; consumption 319; diarrhoeal diseases 194; diphtheria and croup 132; measles 60; scarlet fever 59; typhoid fever 43; cerebro-spinal meningitis 25; whooping-cough 19; erysipelas 14; malarial fever 12; small-pox 5.

¹ Provincial Medical Journal, May 2d.

² Rev. de Clin. et de Therap., December 30th.

³ Therap. Gaz.

⁴ Rev. de Chir., May 10th.

From measles New York 37, Brooklyn 12, Philadelphia 3, Chicago and Boston 2 each, Cleveland, Fall River and Springfield 1 each. From typhoid fever Chicago 14, Cleveland 8, New York and Philadelphia 5 each, Washington 4, Brooklyn and St. Louis 2 each, Boston, Worcester and Taunton 1 each. From cerebro-spinal meningitis Chicago 8, New York 6, Washington 4, Brooklyn 3, Philadelphia 2, St. Louis, Lynn and Brookline 1 each. From whooping-cough Philadelphia 5, New York and Chicago 4 each, Washington 2, Brooklyn, Boston, Nashville and Fall River 1 each. From coryza New York 7, Chicago 3, Philadelphia, Brooklyn, Boston and Cleveland 1 each. From malarial fever Brooklyn 6, New York 4, Nashville and Charlestown 1 each. From small-pox Boston 1, New Bedford 1, Fall River 1, New Haven 1, New Bedford 1, New Haven 1, Fall River 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,415, for the week ending June 11th, the death-rate was 17.9. Deaths reported 3,490: acute diseases of the respiratory organs (London) 208, measles 203, whooping-cough 85, diarrhoea 63, diphtheria 31, scarlet fever 42, fever 19, small-pox (Newcastle) 1.

The death-rates ranged from 11.8 in Croydon to 26.5 in Swanscombe; Birmingham 19.8, Bradford 16.9, Hull 13.2, Leeds 15.1, Leicester 14.2, Liverpool 21.4, London 17.5, Manchester 23.7, Newcastle-on-Tyne 20.6, Nottingham 12.8, Sheffield 16.5, Sunderland 18.1.

METEOROLOGICAL RECORD,

For the week ending June 18, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-meter		Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath.		Rainfall in inches.
	Daily mean.	Daily range.	Maximum.	Minimum.	8 A.M.	8 P.M.	8 A.M.	8 P.M.	8 A.M.	8 P.M.	8 A.M.	8 P.M.	
S.—12	29.87	74	90	58	60	54	57	W.	W.	22	14	C.	
M.—13	29.89	83	94	72	66	67	68	S.W.	S.W.	12	12	C.	
T.—14	29.80	85	96	74	61	70	66	W.	W.	10	13	C.	.51
W.—15	30.05	69	74	61	51	58	54	N.W.	N.W.	14	12	C.	.51
F.—16	30.00	76	88	78	70	74	78	S.W.	N.E.	11	12	C.	.73
S.—17	30.30	76	92	60	70	87	84	S.W.	N.E.	12	10	O.	O.
S.—18	30.30	61	64	56	73	59	81	N.E.	N.E.	13	14		1.21
MEAN		30.01	74	83	63	62	67						

* O, cloudy; C, clear; F, fair; G, fog; H, hazy; S, smoky; R, rain; T, threatening; N, snow. + Indicates trace of rainfall. — Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 18, 1892, TO JUNE 24, 1892.

Leave of absence for one month to take effect on or about July 1, 1892, is granted CAPTAIN WILLIAM BANISTER, assistant surgeon, U. S. A.

MAJOR JOHN S. BILLINGS, surgeon, U. S. A., granted leave of absence for one month and fourteen days, with permission to go beyond sea.

RECENT DEATHS.

RICHARD SPRAGUE, M.D., M.M.S.S., died at the Massachusetts General Hospital, June 28th, aged thirty-two years. On Friday last he was thrown from an open electric car while attempting to get on, and received a fracture of the base of the skull. Dr. Sprague graduated from Harvard College in the class of 1881, and from the Medical School in 1887. He was surgical house-officer in the Massachusetts General Hospital, 1887-88.

SIR WILLIAM ATKINSON, professor of pathology in the Army Medical School at Wetley, died in London, June 27. He was the author of several works, and was prominent in the introduction of the clinical thermometer.

BOOKS AND PAMPHLETS RECEIVED.

An American Leper. By D. W. Montgomery, M.D. Reprint. 1892.

Expert Witnesses. By J. T. Eskridge, M.D. Denver, Col. Reprint. 1892.

Proceedings of the Philadelphia County Medical Society, Session of 1891.

Clinical Contributions to Brain Surgery. By John B. Roberts, M.D., Philadelphia. Reprint. 1891.

What to do in Case of Accident. By B. Merrill Ricketts, Ph.B., M.D., Cincinnati: James Barclay. 1892.

The Effect of Fluids on the Strength of Catgut. By D. Braden Kyle, M.D., Philadelphia. Reprint. 1892.

A Series of Fifty Consecutive Operations for Cataract. By Robert L. Randolph, M.D., Baltimore. Reprint. 1892.

To What Extent is the Diagnosis of Pregnancy Possible in the Early Months? By Charles Jewett, A.M., M.D., Brooklyn, N.Y. Reprint. 1892.

Diseases of the Nervous System. By J. A. Omorod, M.D., Oxon, F.R.C.P., London. Illustrated. Philadelphia: Blakiston, Son & Co. 1892.

Materialism and Modern Physiology of the Nervous System. By William H. Thompson, M.D., LL.D. New York: G. P. Putnam's Sons. 1892.

A Case of Associated Streptococcus Infection of the Vermiform Appendix and Fallopian Tube. By Hunter Robb, M.D., Baltimore. Reprint. 1892.

How to Feel the Pulse and What to Feel in It: Practical hints for beginners. By William Ewart, M.D., F.R.C.P. New York: William Wood & Co. 1892.

Arsenical Poisoning, by means of Wall Papers, Paints and Other Articles in Domestic Use. By Henry Fovall, M.D., Mount Morris, N. Y. 1892.

The Tenth Annual Report of the State Board of Health of the State of New Hampshire for the Year ending October 31, 1891. Concord: Ira C. Evans. 1891.

Public Health, Papers and Reports. Vol. xvii. Presented at the Nineteenth Annual Meeting of the American Public Health Association, Kansas City, 1891.

Microscopical Observations on the Blood and Excreta in Cases of Cholera. By Surgeon Patrick Hehir, M.D., F.R.C.S.E., Hyderabad, India. Reprint. 1892.

A Study of Influenza and the Laws of England Concerning Infectious Diseases. By Richard Sisley, M.D., M.R.C.P. London: Longmans, Green & Co. 1892.

Remarks of Hon. Jacob H. Gallinger of New Hampshire in the Senate of the United States on a National Sanitorium for the Treatment of Pulmonary Diseases.

A System of Practical Therapeutics. Edited by Hobart Amory Hale, M.D., assisted by Walter Christie, M.D. Vol. iii. Philadelphia: Lea Brothers & Co. 1892.

Transactions of the American Dermatological Association at its Fifteenth Annual Meeting held at Washington, D. C., on the 22d, 23d, 24th and 25th of September, 1891.

The Natural History of the Species Medicina (Zur Naturgeschichte des Medicus). By Dr. Risorius Santorini. Translated by "Familus." New York: D. Appleton & Co. 1892.

The Wife and Mother, a Medical Guide to the Care of her Health and the Management of her Children. By Albert Westland, M.D. Philadelphia: P. Blakiston, Son & Co. 1892.

Report on Capital Punishment of a Committee appointed by the Medical Society of the State of New York at its annual meeting in 1891, and presented before the Society at the Session of 1892. Reprint. 1892.

A Treatise on Gynecology, Medical and Surgical. By S. Pozzi, M.D., translated with additions by Brooks H. Wells, M.D. Vol. ii, with illustrations and colored plates. New York: William Wood & Co. 1892.

Introduction to the Antisепtic Treatment of Wounds, according to the Method in Use at Professor Billroth's Clinic. By Dr. Victor R. von Hacker; translated by Surgeon-Captain C. R. Kilkey, M.B. London: Percival & Co. 1892.

Treatise on the Diseases of Women for the use of Students and Practitioners. By Alexander J. C. Skene, M.D., Professor of Gynecology in the Long Island College Hospital, etc. Second edition, revised and enlarged. New York: D. Appleton & Co. 1892.

Two Cases of Removal of Laminae for Spinal Fracture. Surgical and Mechanical Treatment of the Deformities Following Infantile Spinal Paralysis. Intra-thoracic Surgery; Bronchotomy through the Chest-wall for Foreign Bodies Impacted in the Bronchi. Experiments in Pneumonectomy and Pneumonecotomy; Suturing of Lung. By DeForest Willard, M.D., Ph.D., Philadelphia. Reprints. 1891 and 1892.

My Recent Experience in Operating for the Laceration of the Perineum Involving the Sphincter Ani, with a Description of my Method of Flap-splitting. The Diagnosis and Treatment of Intestinal Obstruction due to Laponotomy. The Importance of Understanding the Function of the Levator Ani Muscle in the Treatment of Injuries of the Floor of the Vagina. Rules to be Followed in the Effort to Prevent Mural Abscesses, Abdominal Sinuses and Ventral Hernia after Laparotomy. By Horace Tracy Hanks, M.D., New York. Reprints. 1890 and 1891.

